

BCCDC COVID Data Summary

2 December 2021

Purpose

The surveillance deck is a summary of COVID-19 related indicators that can help inform the pandemic response in British Columbia. This surveillance monitoring constitutes the medical chart for population health assessment that guides the public health community of practice. As such this is a working document that reflects a snapshot in time and may differ from other published reports.

Data Sources

The collection, use and disclosure of case data is subject to the Public Health Act. COVID-19 cases are reported under the Public Health Act to the health authority of residence. Public health case notification, clinical management, contact tracing and follow-up contributes surveillance data for regional and provincial COVID-19 monitoring. Each regional health authority have their own workflows and information systems for capture of relevant data. This data foremost serves the public health and clinical management of the case and their contacts.

Disclaimer

- Data and key messages within these documents are not finalized and considered to be work in progress that is subject to retroactive changes as more data and information become available.
- Accurate interpretation of figures may be difficult with the limited inclusion of data notes and methodology descriptions in this document.

Note: Information provided in this slide deck is or will be available in the data products listed below, at the same or greater frequency. As of December 15, 2021 this product will be discontinued.

[BCCDC COVID-19 Regional Surveillance Dashboard](#): updated 2x week (Tues & Fri)

[BCCDC COVID-19 Epidemiology app](#): updated 3x week (Mon, Wed, Fri)

[Situation Report](#): updated weekly

[Laboratory report on variants and lineages](#) : updated weekly

[School report](#): updated monthly

[BC COVID-19 SPEAK Survey Dashboards](#)

Table of Contents

Overall Summary5

Surveillance6

 BC Epidemiology.....6

 Vaccination coverage and outcomes by vaccine status.....18

 Labs/Genomics.....32

Modelling.....45

Pediatric Report.....46

Additional Resources.....55

Overall Summary for surveillance data to Dec 2

- **Case rates** continue to decline provincially; decreasing in FH, NH, IH and VCH and relatively stable in VIHA.
- **Test positivity** among public tests continues to decline slowly (~4.9% provincially), and remains high in NH (16%).
- **New hospitalizations** and **hospital census** are beginning to decline provincially, **critical care** census is stable, but there is regional variation across BC; **new deaths** are low and stable.
- Hospitalization rates among **children** continue to remain very low.
- The **majority of new cases and hospitalizations** continue to be among **unvaccinated** individuals.
- **Vaccine** coverage in BC, 30 Nov, 1 dose (2 doses): ~81% (78%) of total population, ~91% (88%) of 12+ eligible population. Lower vaccine coverage in Interior and Northern.
- The Delta **variant** continues to account for ~100% of all positive tests in BC. There are 2 main sub-lineages circulating in BC: AY.25 and AY.27.
- 1 case of Omicron reported

Nov 25 to Nov 30: BC COVID-19 Profile



218,801 total cases
2,467 new this week



2,340 total deaths
27 new this week

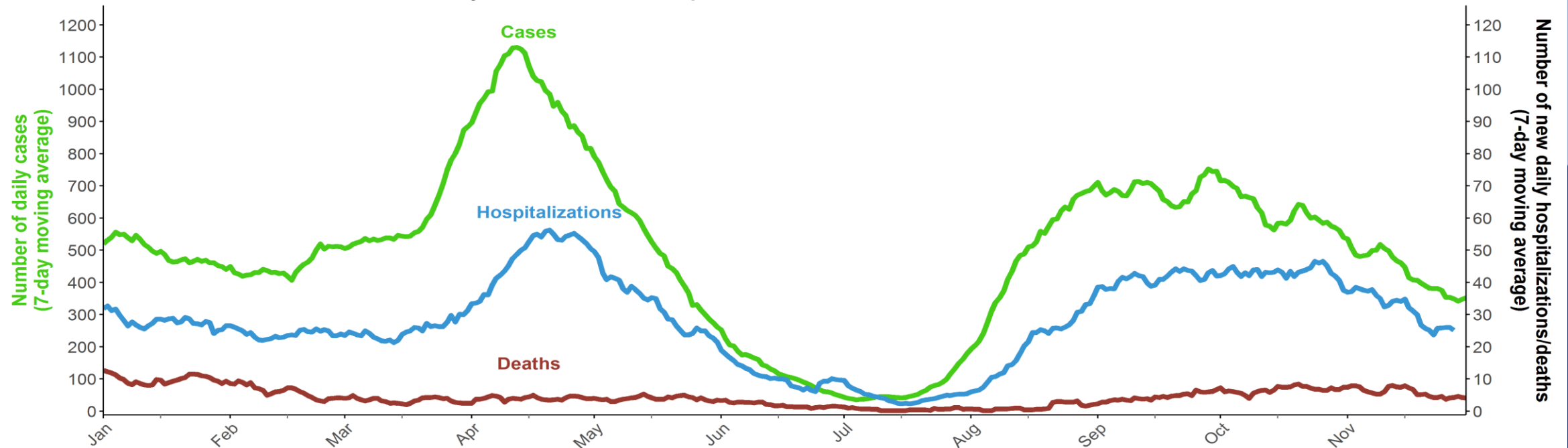


12,351 ever hospitalized
180 new this week



213,394 removed from isolation
2,566 new this week

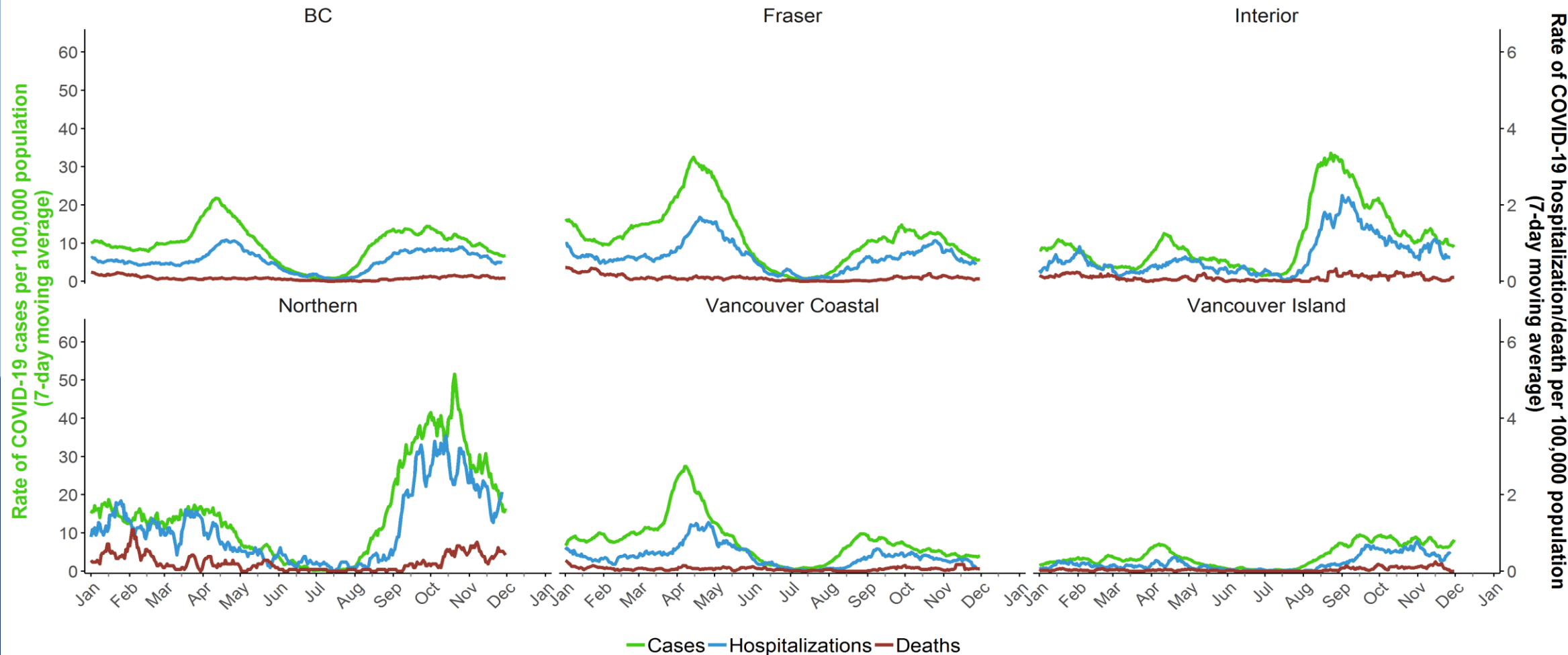
New daily COVID-19 cases, hospitalizations and deaths, Jan 01 2021 - Nov 30 2021



* Data are by surveillance date for cases and deaths, and admission date for hospitalizations
Data source: PHRDW Dec-01-2021

Case rates continue to decline slowly provincially; new hospitalizations are beginning to decline provincially; new deaths are low and stable. Note the regional variation.

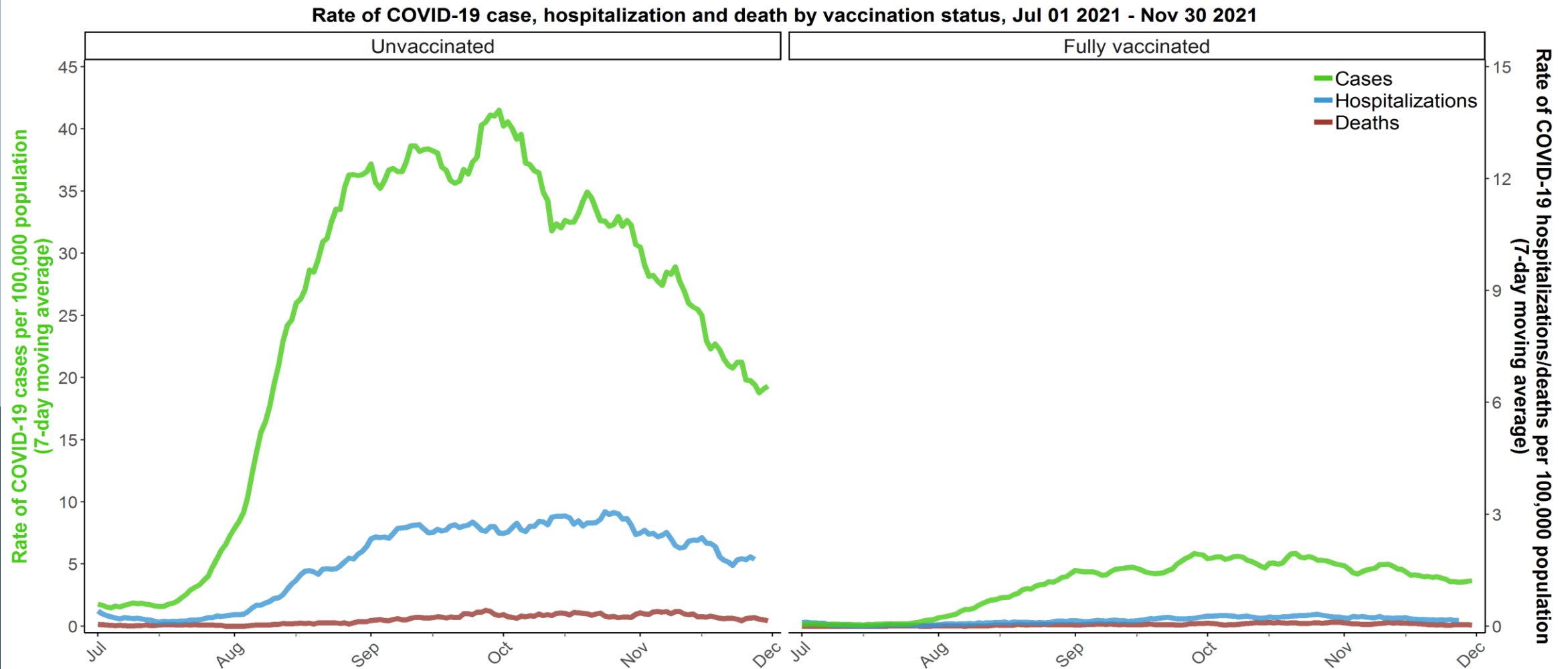
Rate of COVID-19 case, hospitalization and death, Jan 01 2021 - Nov 30 2021



* Data are by surveillance date for cases and deaths, and admission date for hospitalizations
Data source: PHRDW Dec-01-2021

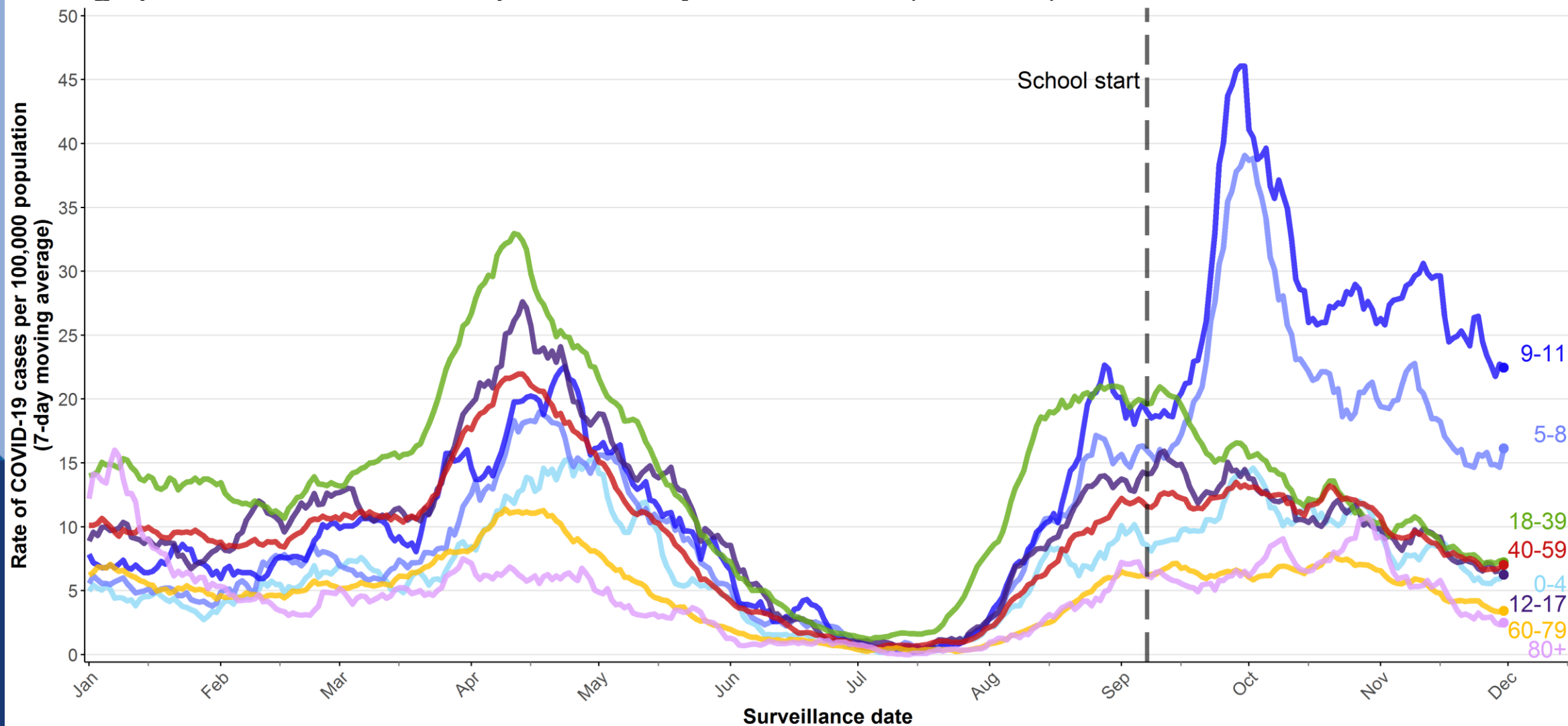
For latest version of a graph similar to this one (difference: hospital census, not new hospitalizations), see the [Epi App](#)

The majority of new cases and hospitalizations continue to be among unvaccinated individuals



* Data are by surveillance date for cases, death date for deaths, and admission date for hospitalizations
Data source: PHRDW Dec-01-2021

Incidence is stable among 5 to 11 years (currently unvaccinated), and decreasing in all other age groups. Note: this graph looks different once separated out by vaccine status (next slide)

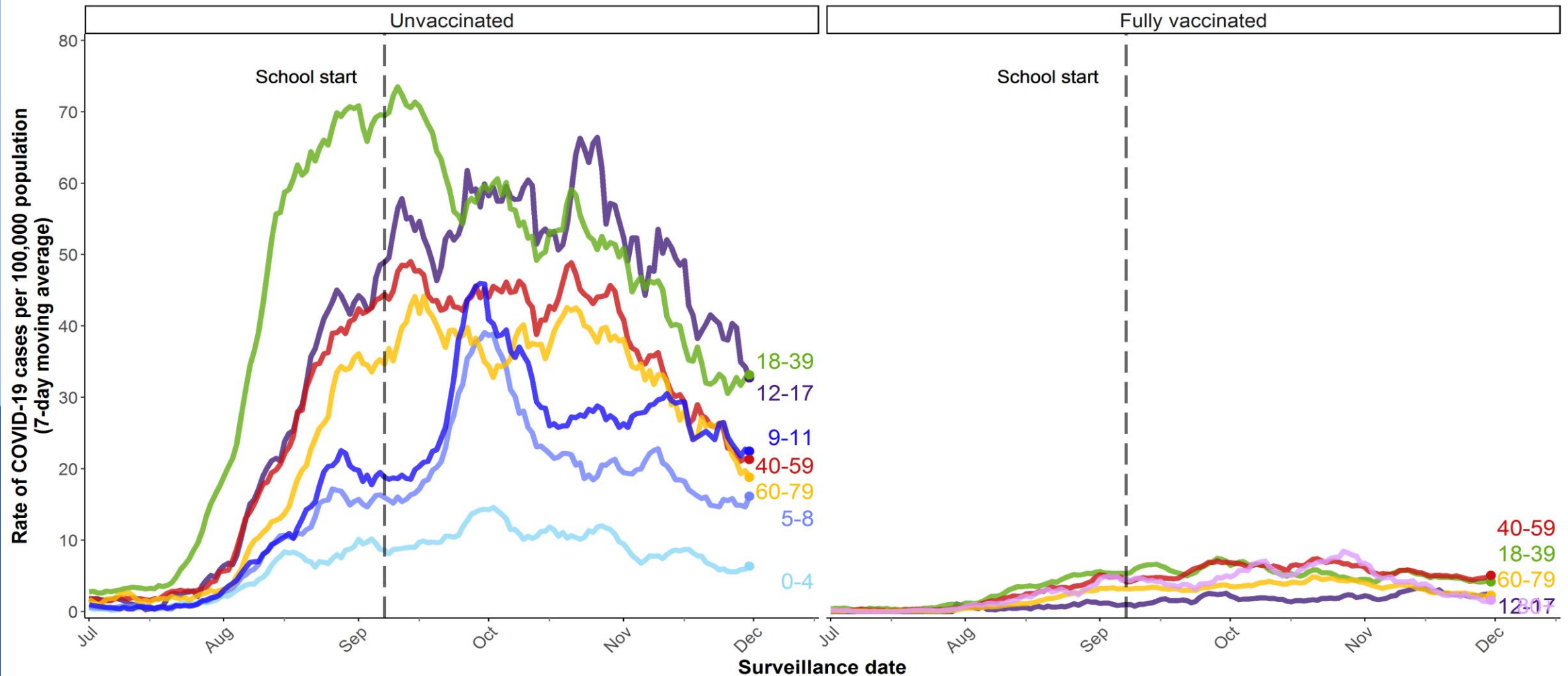


* Data based on surveillance date (i.e. lab result date, or when not available, date reported to public health)

Data range: Jan 01 2021 - Nov 30 2021

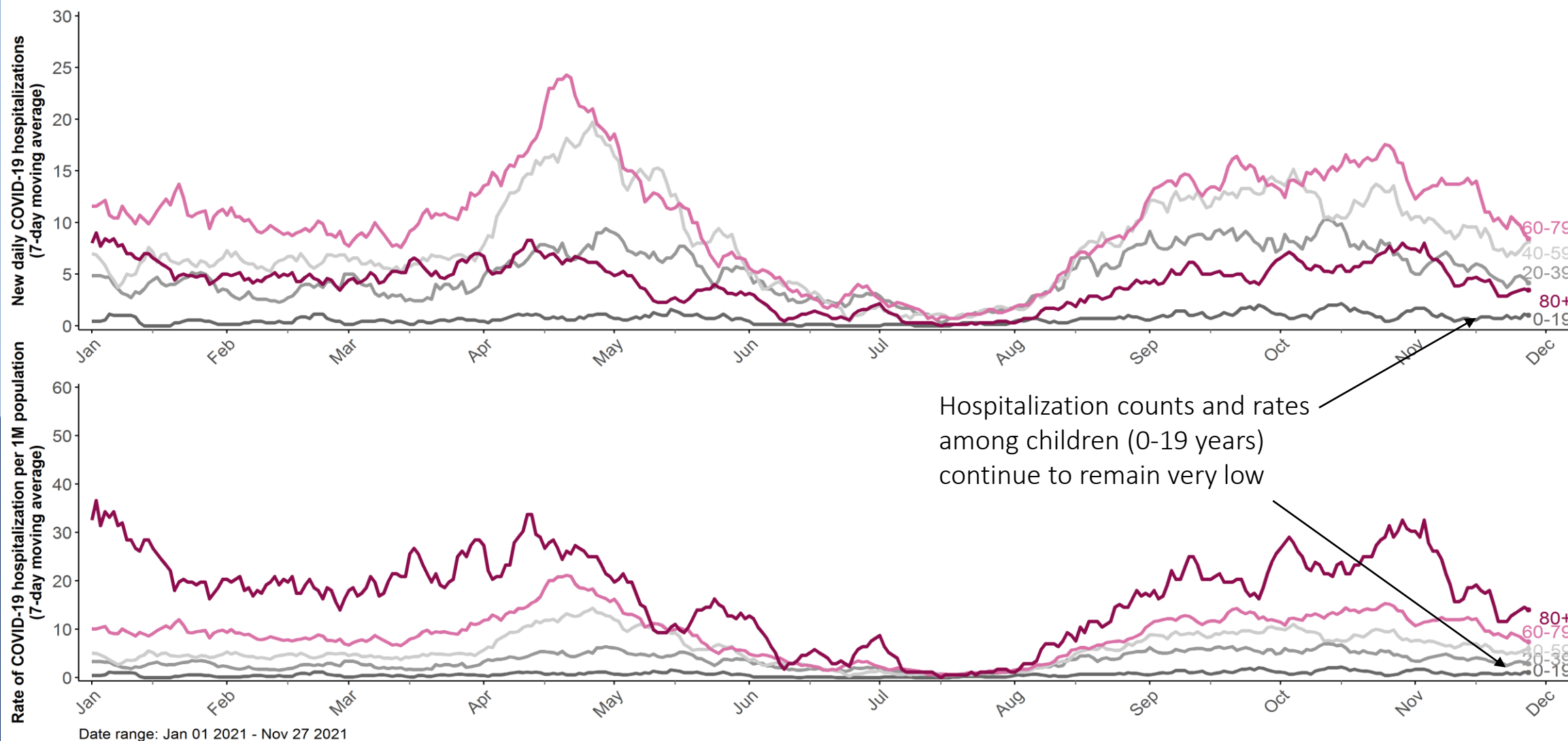
Data source: PHRDW Dec-01-2021

For all age groups 12+, those who are vaccinated have very low case rates. Among those unvaccinated, case rates are lowest among children < 9 years.



* Data based on surveillance date (i.e. lab result date, or when not available, date reported to public health)
Date range: Jul 01 2021 - Nov 30 2021
Data source: PHRDW Dec-01-2021

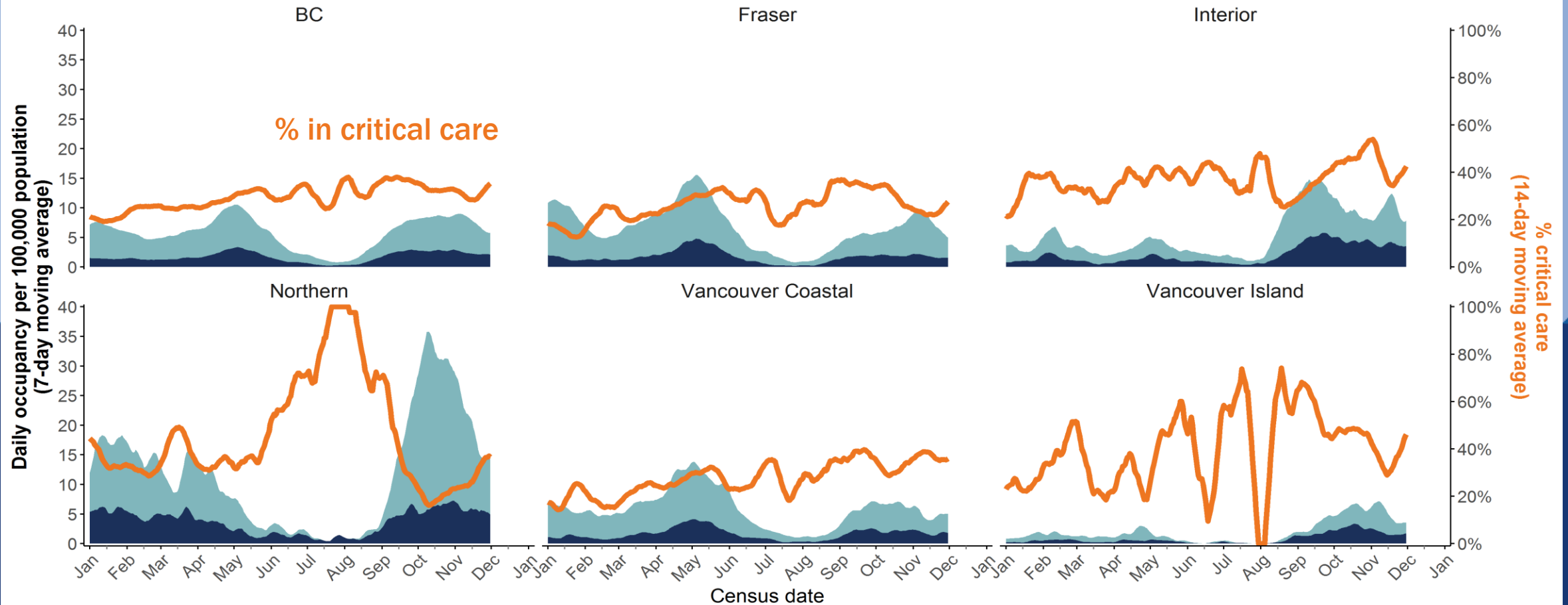
Trends in number and rate of new hospitalizations by age group, BC, 1 Jan – 27 Nov 2021



Hospital census is declining provincially; critical care census is stable. Note the variation by health authority.

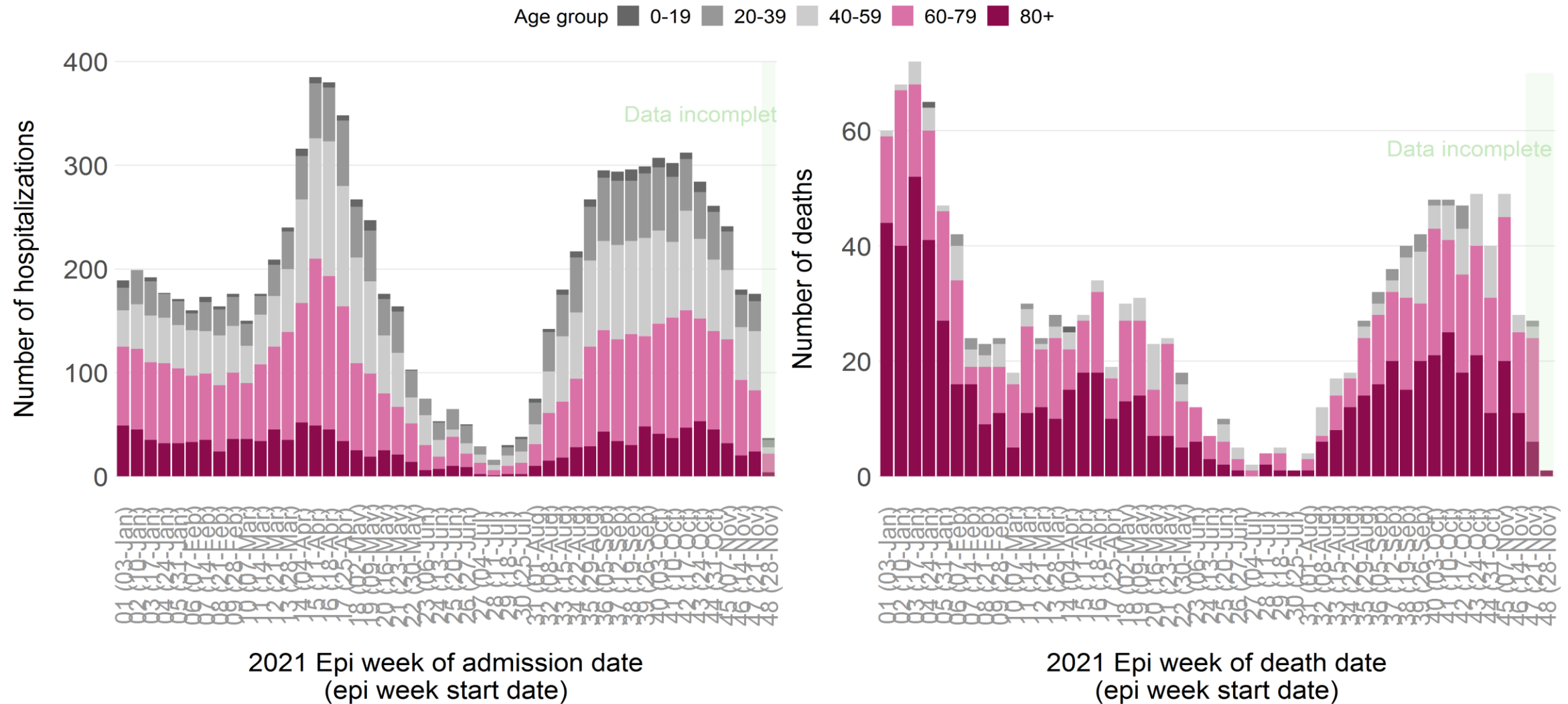
Current COVID-19 hospitalizations in BC, Jan 01 2021 - Nov 30 2021

■ In the hospital but not in critical care ■ In critical care

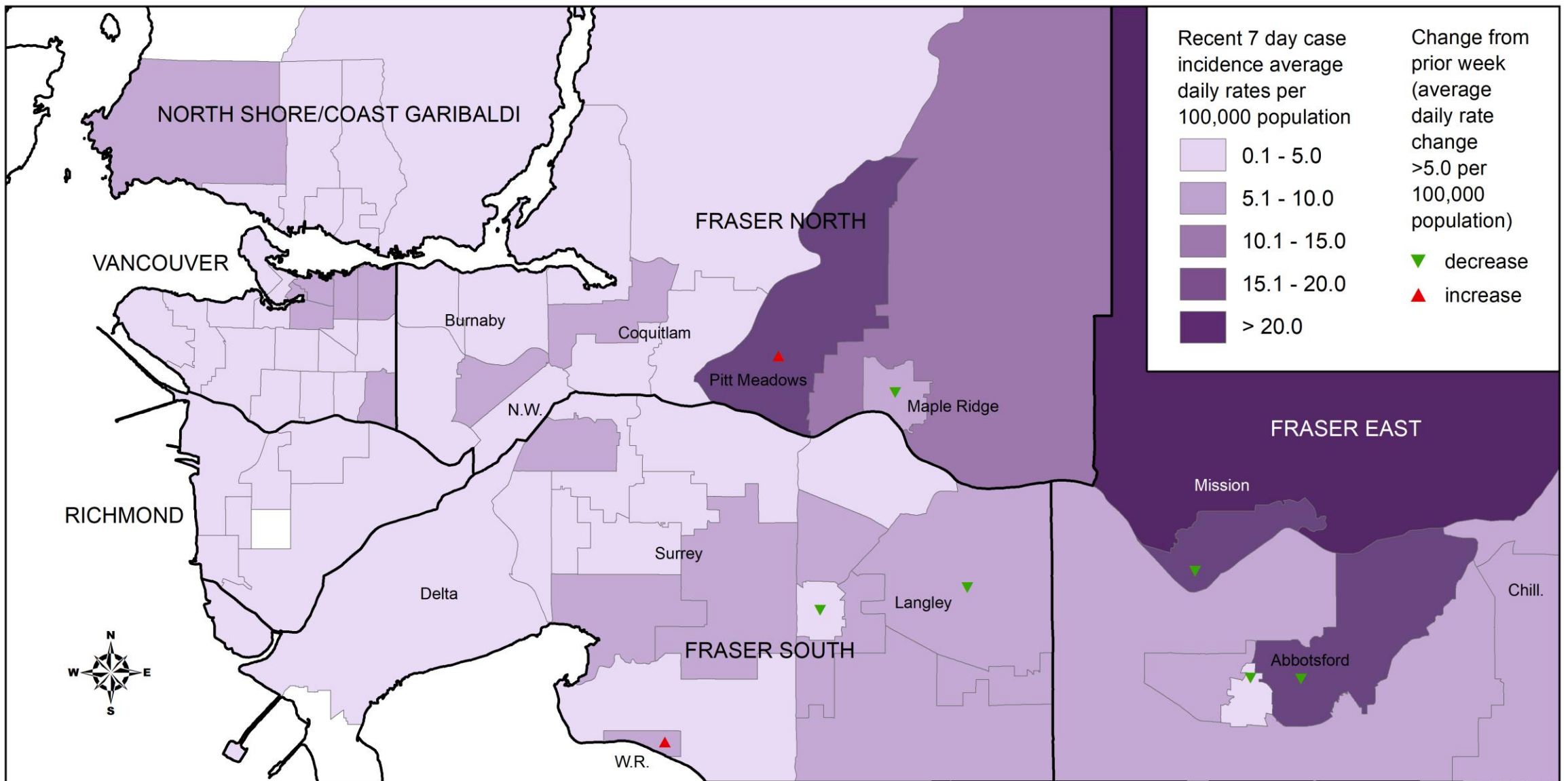


* Data are presented by health authority of hospitalization; some patients are hospitalized in a different health authority than they live in
Data source: PHSA Provincial COVID19 Monitoring Solution (PCMS) Dec-01-2021

Number of new hospital admissions is elevated but has declined in the last 2 weeks. The majority of deaths are among individuals ≥60 years.

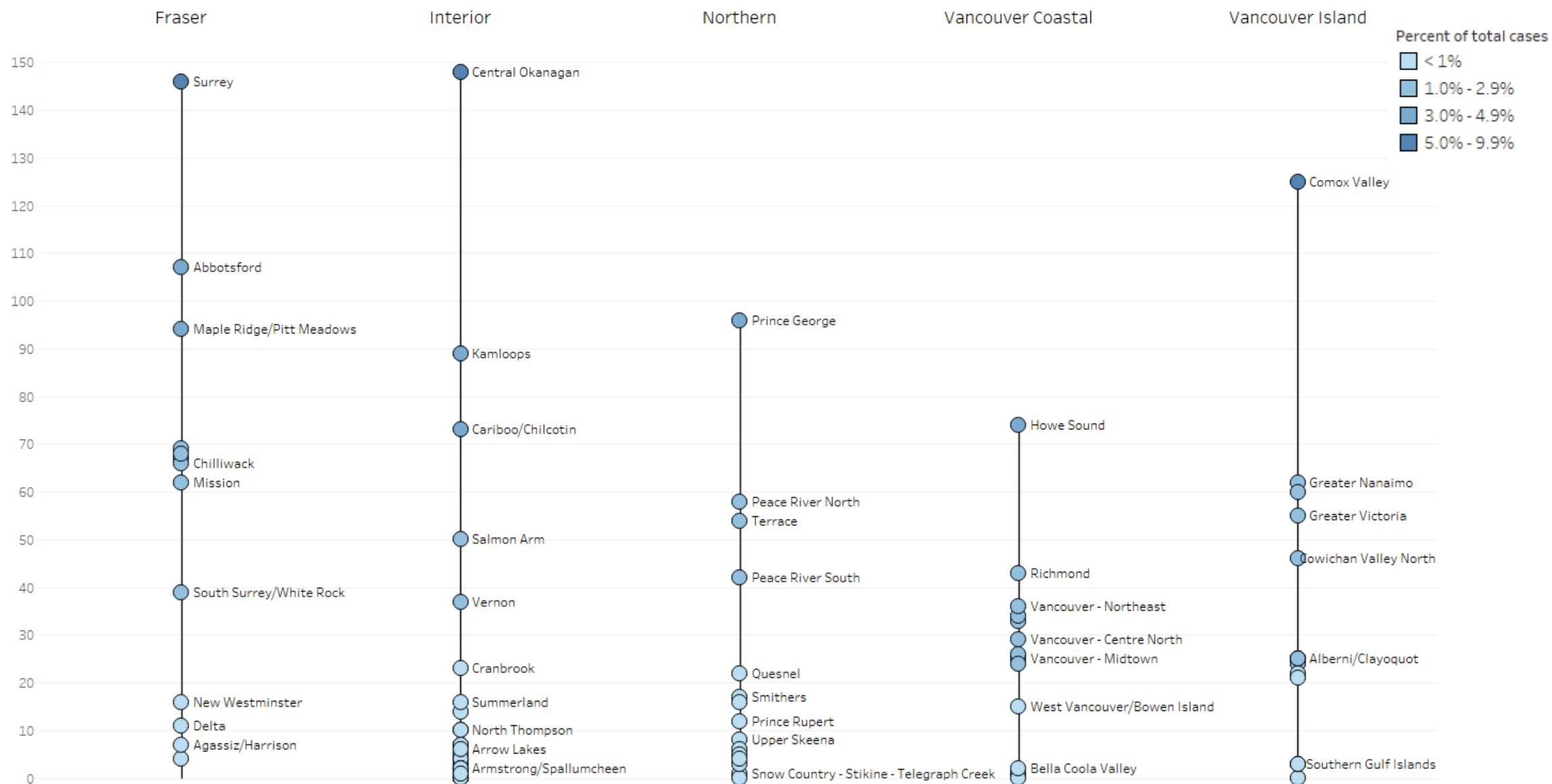


Data extracted on 2021-12-01; hospitalization and death data from health authority case line list data

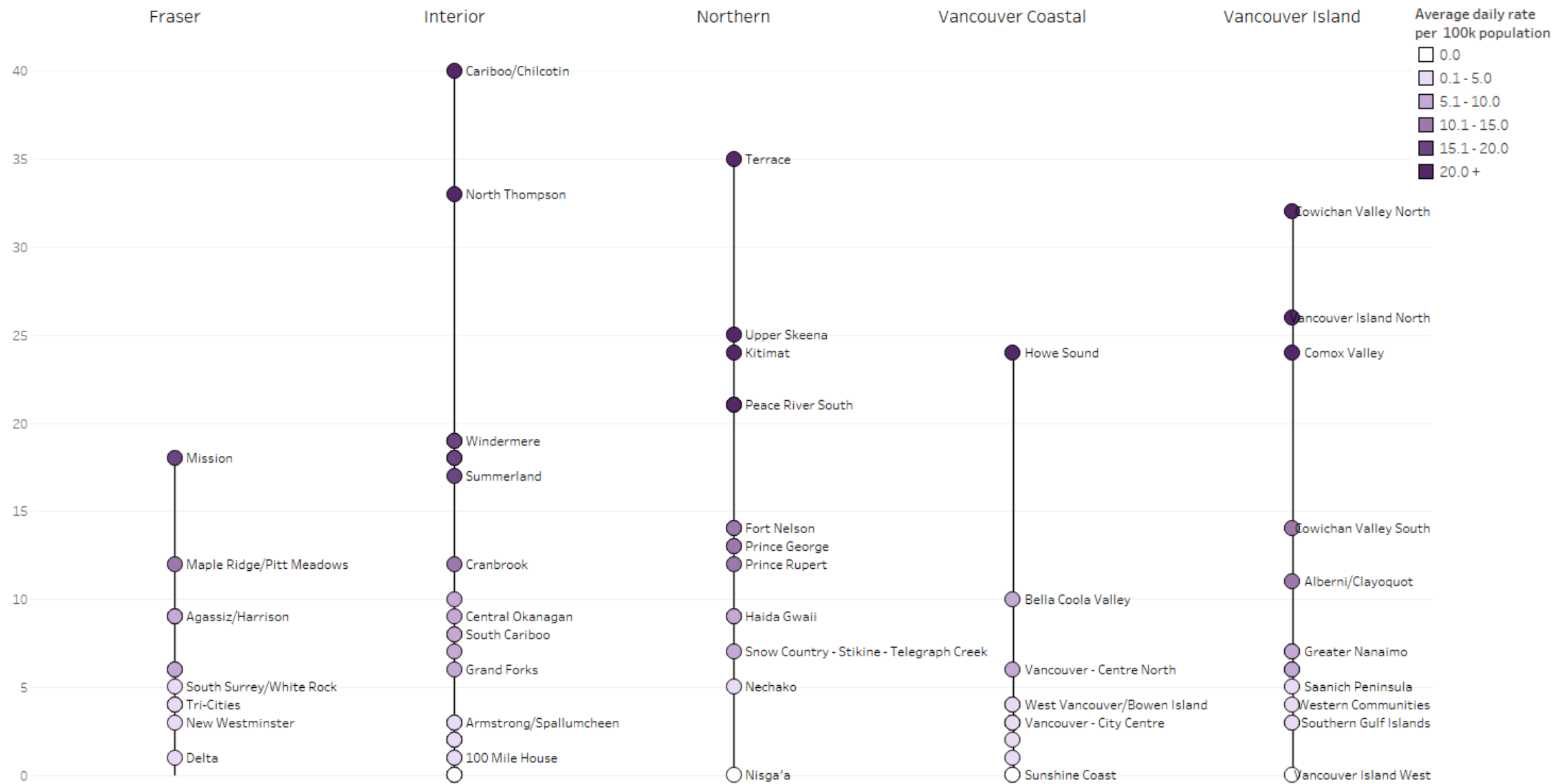


COVID-19 Recent 7-Day Case Incidence Rates by CHSA (November 24 to 30, 2021)

Total cases by local health area, Nov 24 - Nov 30, 2021



Average daily **case rate** of new cases per 100,000 population, by local health area, Nov 24 - Nov 30, 2021

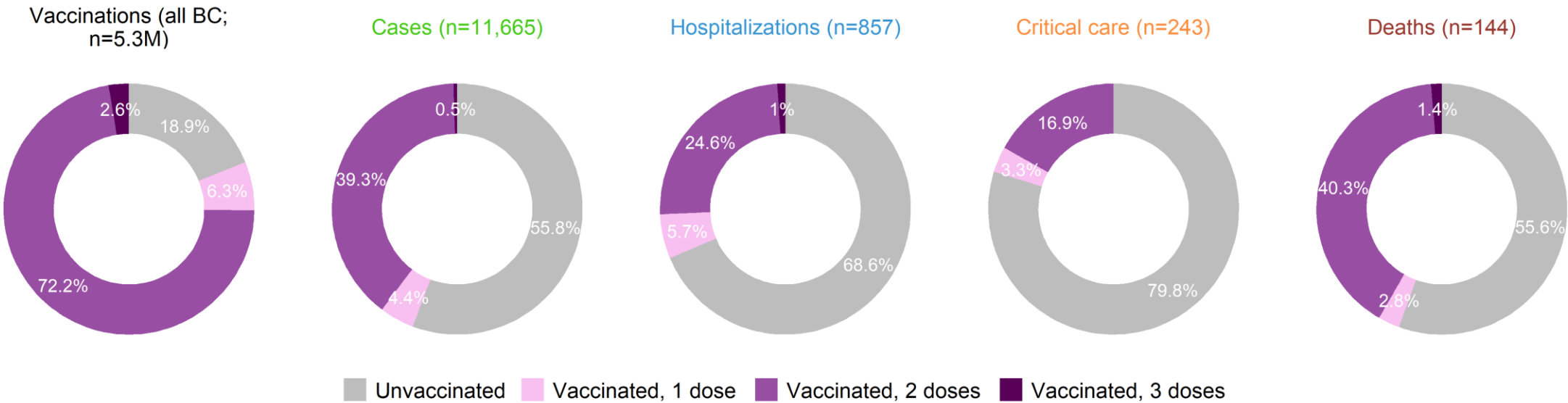


Key messages – vaccination coverage and outcomes by vaccine status

- **Vaccine coverage** in BC, 30 Nov, 1 dose (2 doses): ~81% (78%) of total population, ~91% (88%) of 12+ eligible population. Lower vaccine coverage in Interior and Northern.
- Most of the recent cases and hospitalizations continue to be among unvaccinated individuals
- Based on data over the last 4 weeks, compared with fully vaccinated individuals and after adjusting for age differences, unvaccinated individuals are
 - ≈ **8x** more likely to become a case
 - ≈ **32x** more likely to be hospitalized
 - ≈ **52x** more likely to be admitted to critical care
 - NB: relative rates fluctuate over time and do not represent vaccine effectiveness
- **Unvaccinated**: no dose or not yet protected (<3 weeks since receipt of 1st dose; <10% of unvaccinated cases)
- **Vaccinated, 1 dose**: ≥3 weeks since receipt of 1st dose and <2 weeks after 2nd dose
- **Vaccinated, 2 doses**: 2 weeks or more after receipt of 2nd dose and <2 weeks after 3rd dose (if applicable)
- **Vaccinated, 3 doses**: 2 weeks or more after receipt of 3rd dose

Over the past month, **unvaccinated** individuals accounted for **~19%** of the population but **~56% of cases, ~69% of hospitalizations, and ~80% of critical care admissions.**

These % are expected to increase over time as more people get fully vaccinated and there are fewer unvaccinated people. There are many more vaccinated individuals than unvaccinated individuals, and thus it is important to take the denominator into account. These figures do not represent vaccine effectiveness.



Data include cases from Nov 03-Nov 30, hospitalizations, critical care admissions and deaths from Oct 31-Nov 27, and vaccination statistics on Nov 16, 2021

A large proportion of deaths is among older (80+) individuals, >90% of whom are fully vaccinated, which explains the higher relative % of deaths among the fully vaccinated.

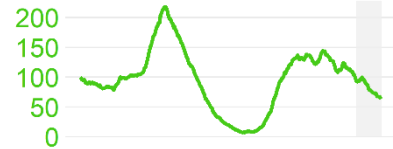
We operate in a live database environment and data get updated retrospectively. These figures may differ slightly from previously reported counts. Cases are captured based on surveillance date. Hospitalizations are by admission date. Deaths are by date of death. Please note that there is often a multiple-days lag in recording hospitalizations and deaths, e.g. some hospital admissions that occurred on Sept 24th may not be captured in our surveillance system until Sept 29th.

COVID-19 health outcomes by vaccination status and age, BC, Nov 2021

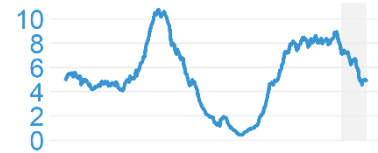
Trend in % total population vaccinated with at least 1 dose



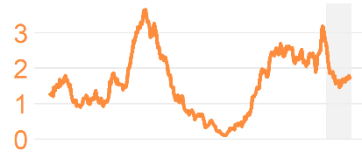
Trend in daily cases per 1M



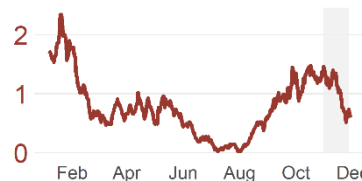
Trend in daily hospitalizations per 1M



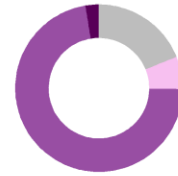
Trend in daily critical care per 1M



Trend in daily deaths per 1M



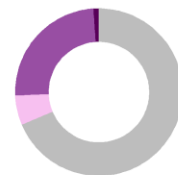
Vaccinations (all BC; n=5.3M)



Cases (n=11,665)



Hospitalizations (n=857)



Critical care (n=243)



Deaths (n=144)



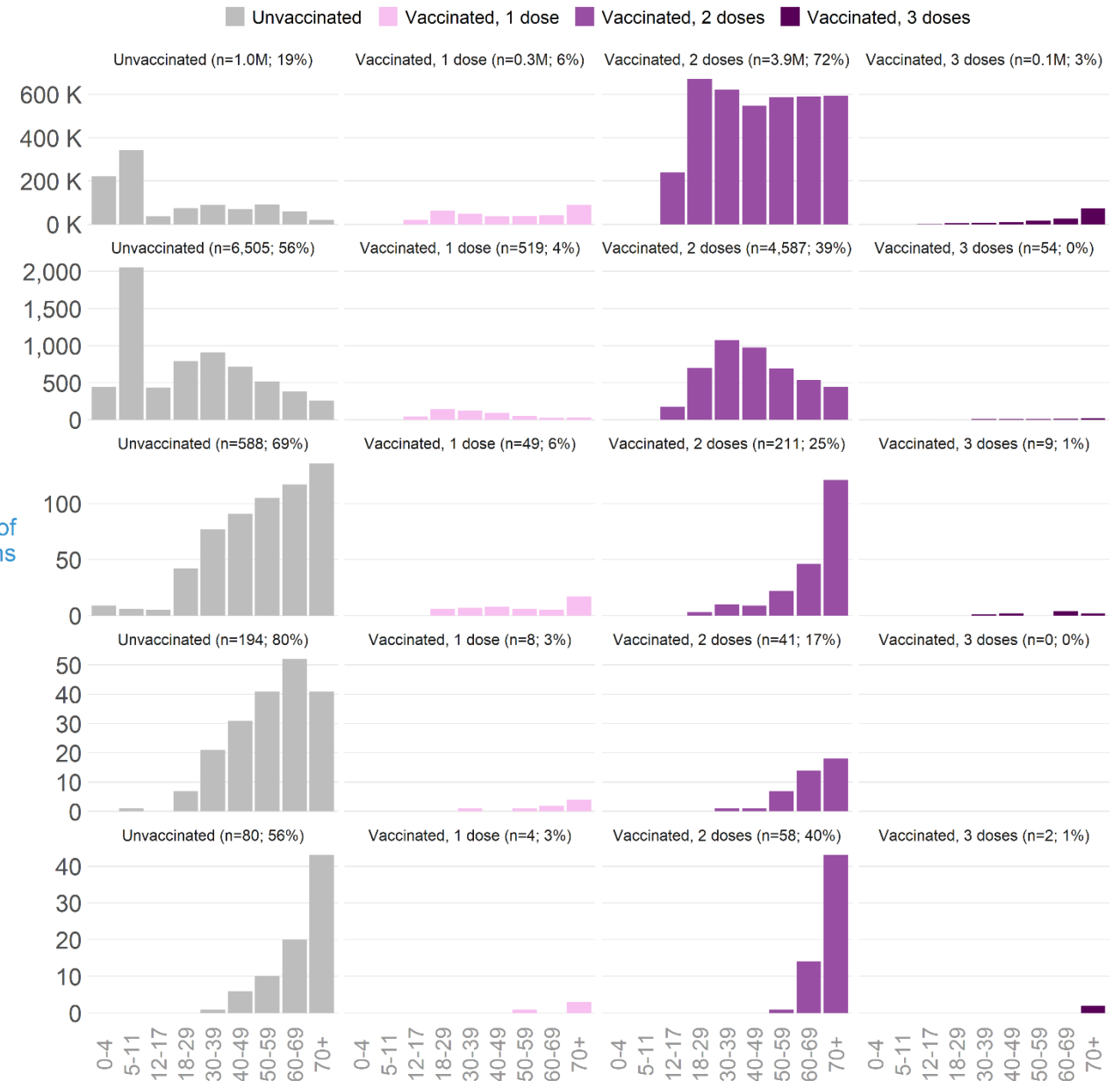
Number of people

Number of cases

Number of hospitalizations

Number of Critical care

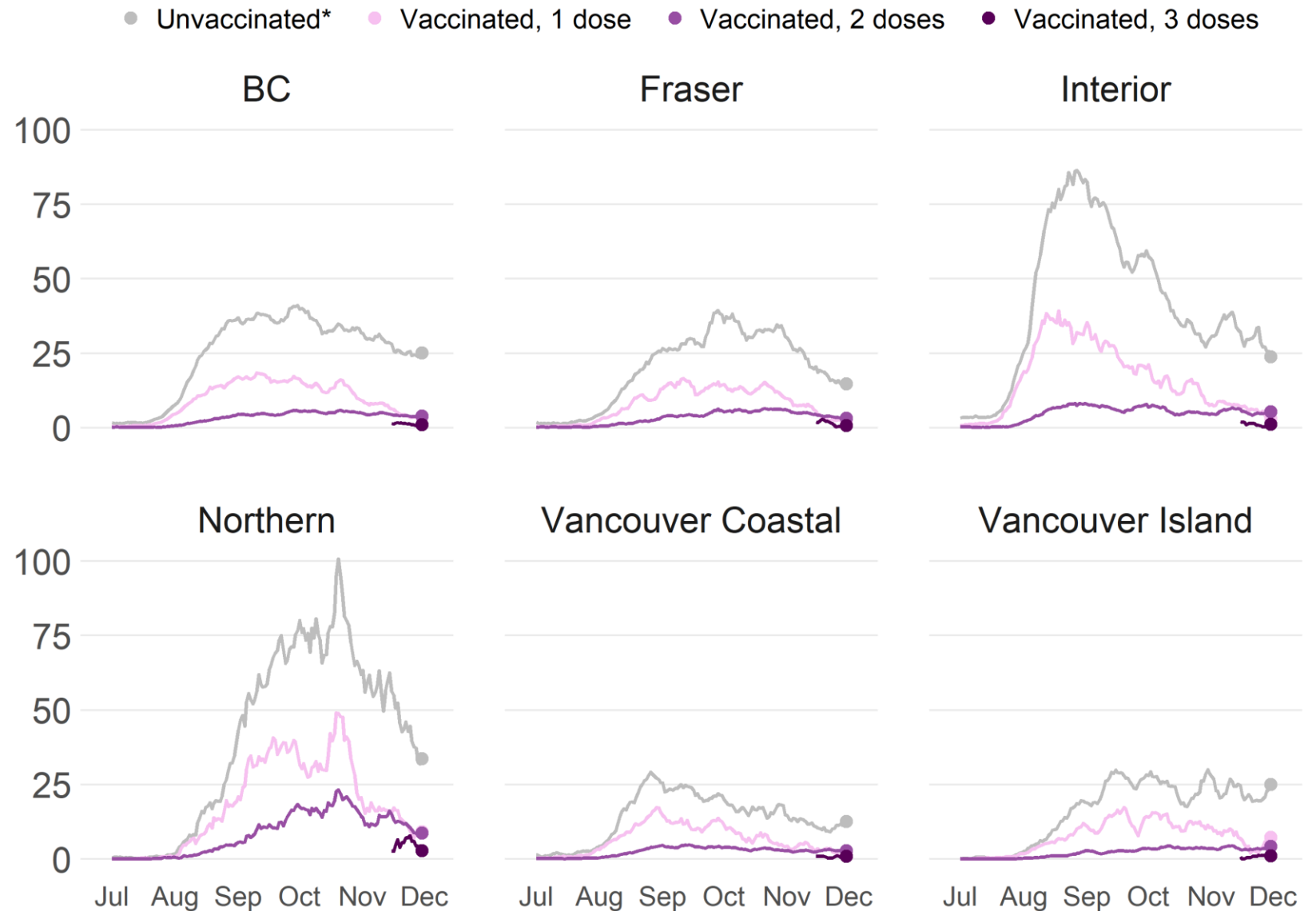
Number of deaths



Data include cases from Nov 03-Nov 30, hospitalizations, critical care admissions and deaths from Oct 31-Nov 27, and vaccination statistics on Nov 16, 2021

COVID-19 **case** rate by vaccination status and Health Authority, July 1 – Dec 2, 2021

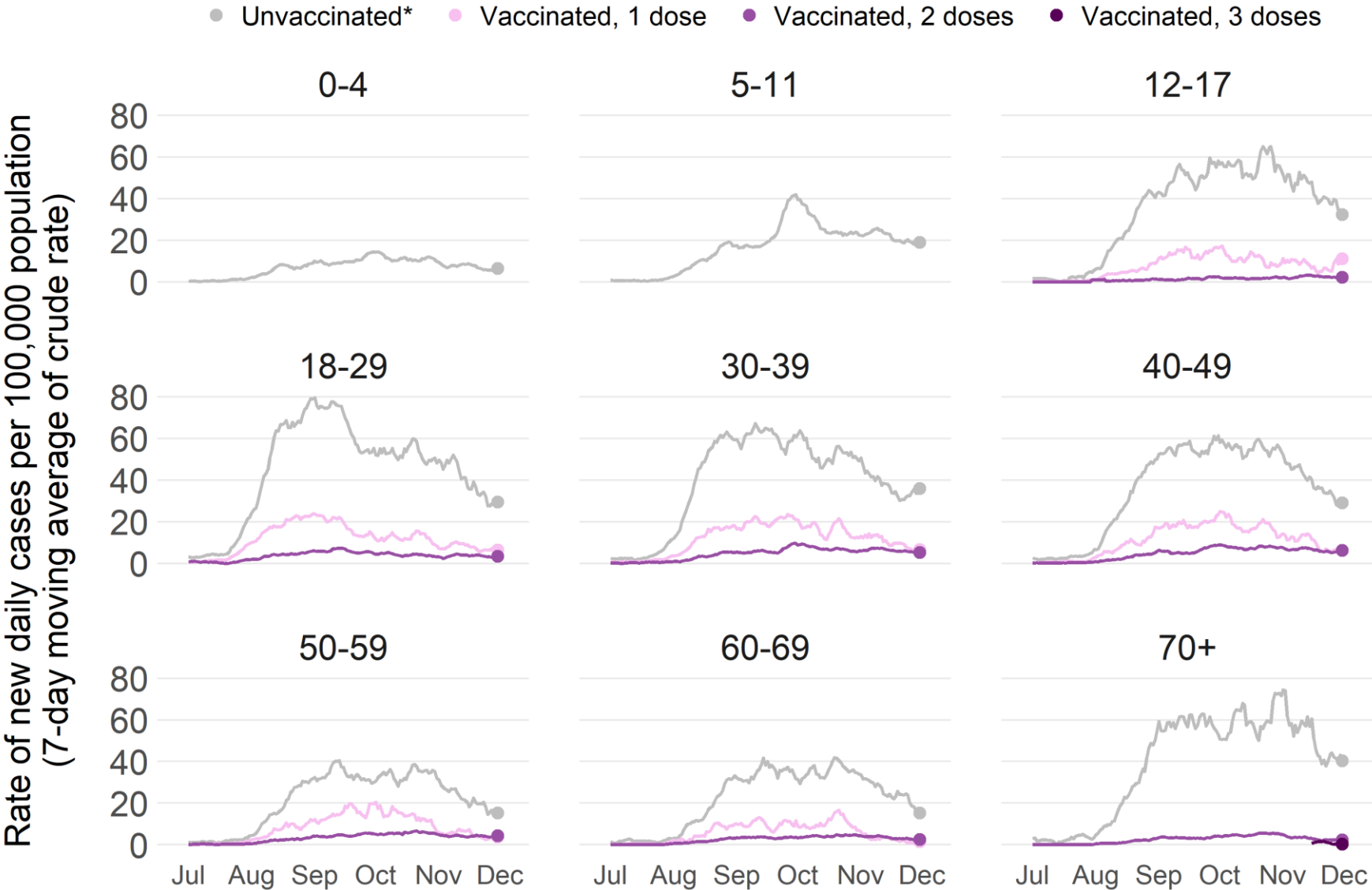
Rate of new daily cases per 100,000 population
(7-day moving average of crude rate)



Denominators for each vaccine status group are dynamic and change daily as people flow from being unvaccinated to protected by 1 dose to protected by 2 doses. Therefore, the denominators are different across groups and over time.

*Unvaccinated includes cases who have received 1 dose but not yet protected (episode date <21 days after 1st dose administration date); These represent 6% of the total unvaccinated cases since 1 July 2021.
Data extracted from health authority case line list on 02 Dec 2021

COVID-19 **case** rate by vaccination status and age, July 1 – Dec 2, 2021

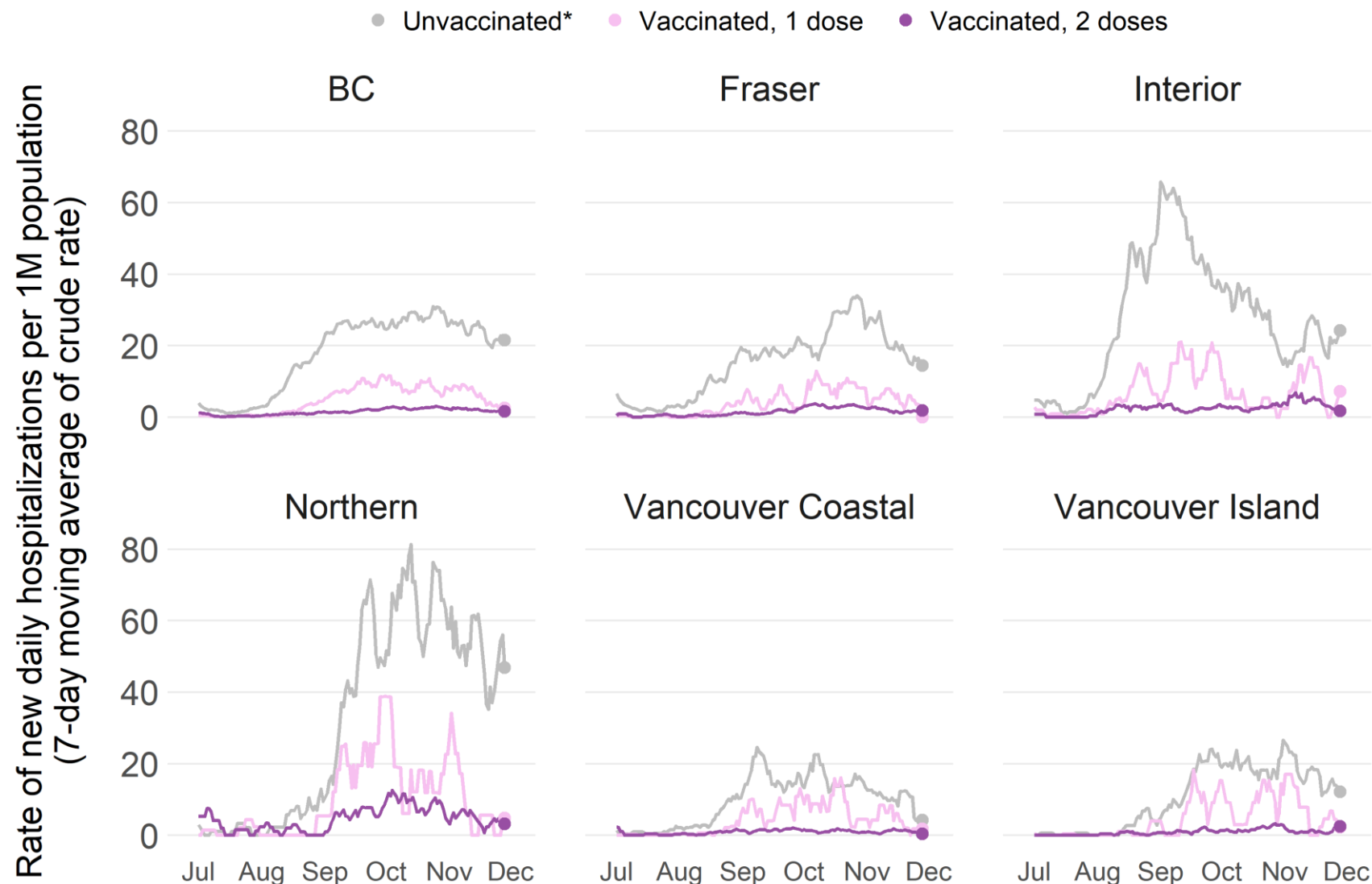


Denominators for each vaccine status group are dynamic and change daily as people flow from being unvaccinated to protected by 1 dose to protected by 2 doses. Therefore, the denominators are different across groups and over time.

*Unvaccinated includes cases who have received 1 dose but not yet protected (episode date <21 days after 1st dose administration date); These represent 6% of the total unvaccinated cases since 1 July 2021.
Data extracted from health authority case line list on 02 Dec 2021

COVID-19 hospitalization rate by vaccination status, July 1 – Nov 28, 2021

Data by hospital admission date. Denominators for each vaccine status group are dynamic and change daily as people flow from being unvaccinated to protected by 1 dose to protected by 2 doses. Therefore, the denominators are different across groups and over time.

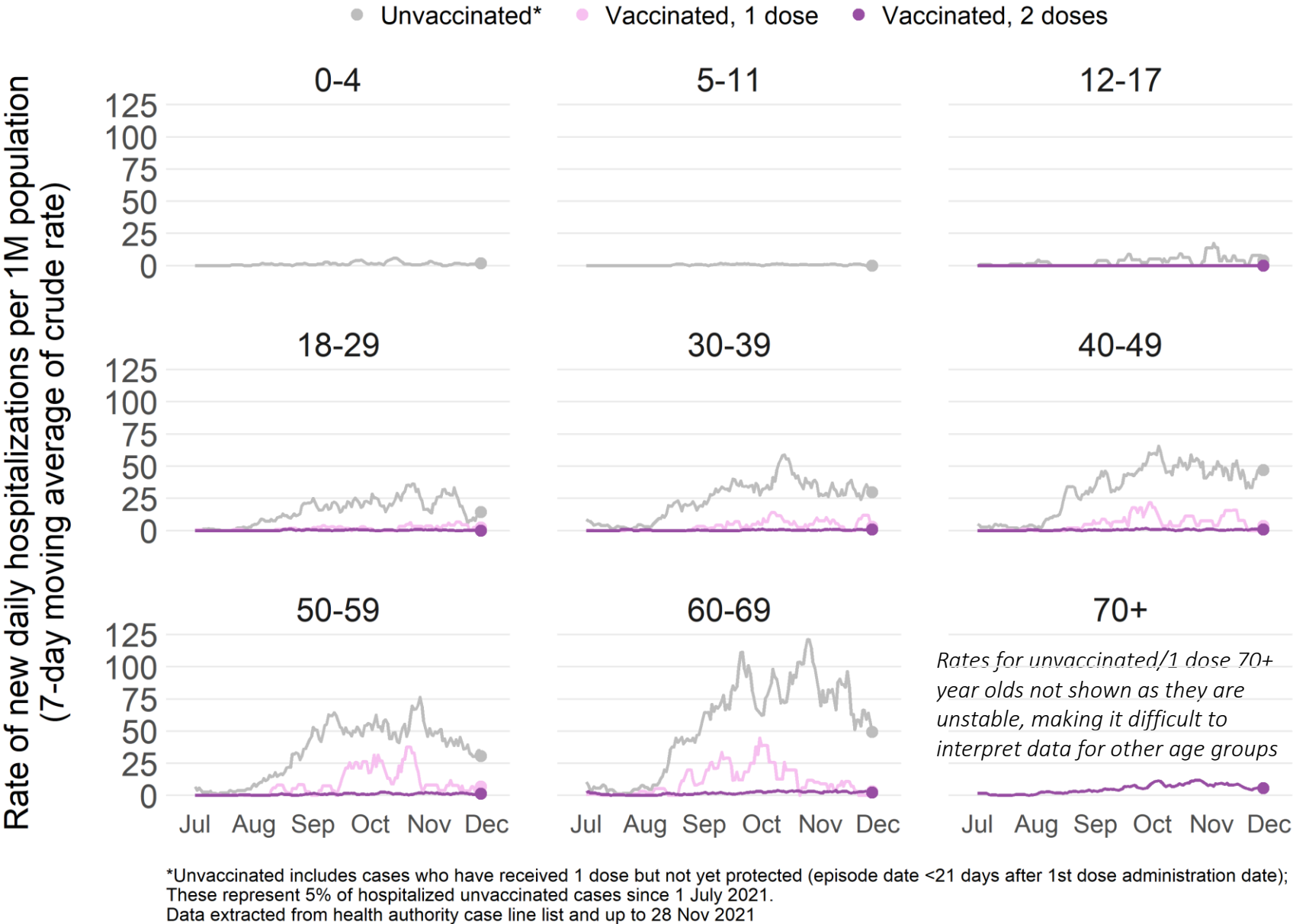


*Unvaccinated includes cases who have received 1 dose but not yet protected (episode date <21 days after 1st dose administration date); These represent 5% of hospitalized unvaccinated cases since 1 July 2021. Data extracted from health authority case line list and up to 28 Nov 2021

COVID-19

hospitalization rate by vaccination status and age, July 1 – Nov 28, 2021

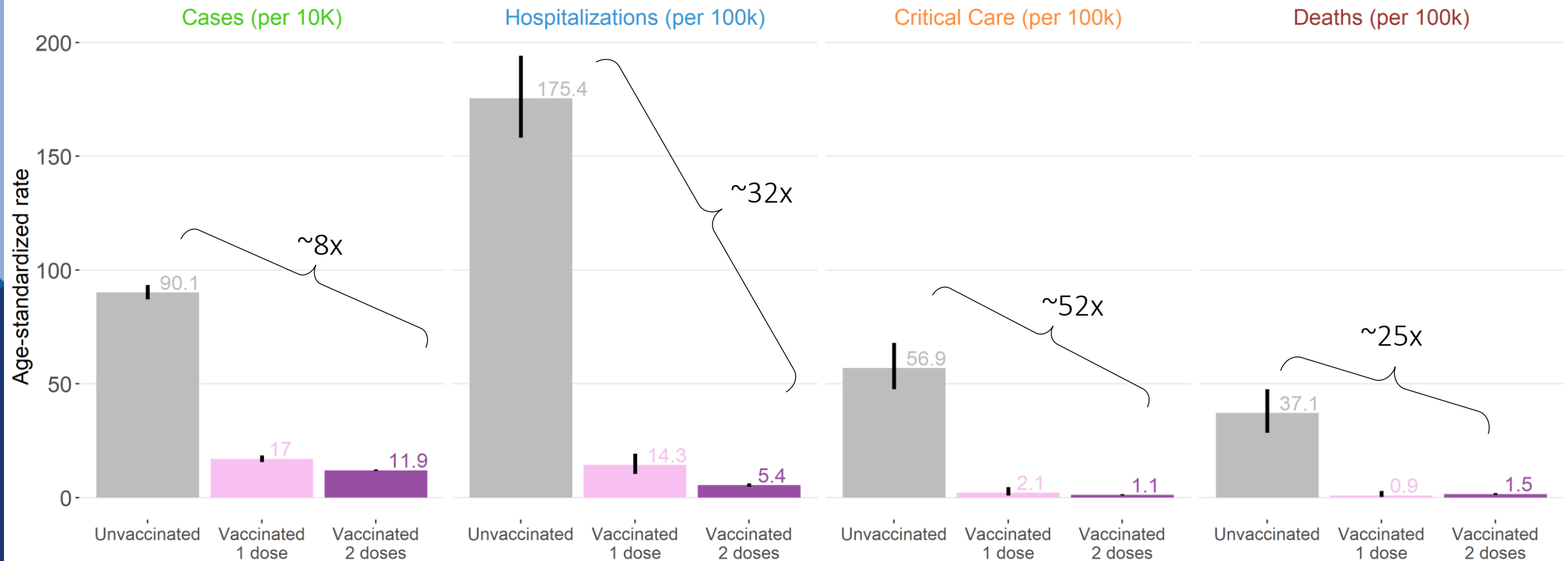
Denominators for each vaccine status group are dynamic and change daily as people flow from being unvaccinated to protected by 1 dose to protected by 2 doses. Therefore, the denominators are different across groups and over time.



Rates for unvaccinated/1 dose 70+ year olds not shown as they are unstable, making it difficult to interpret data for other age groups

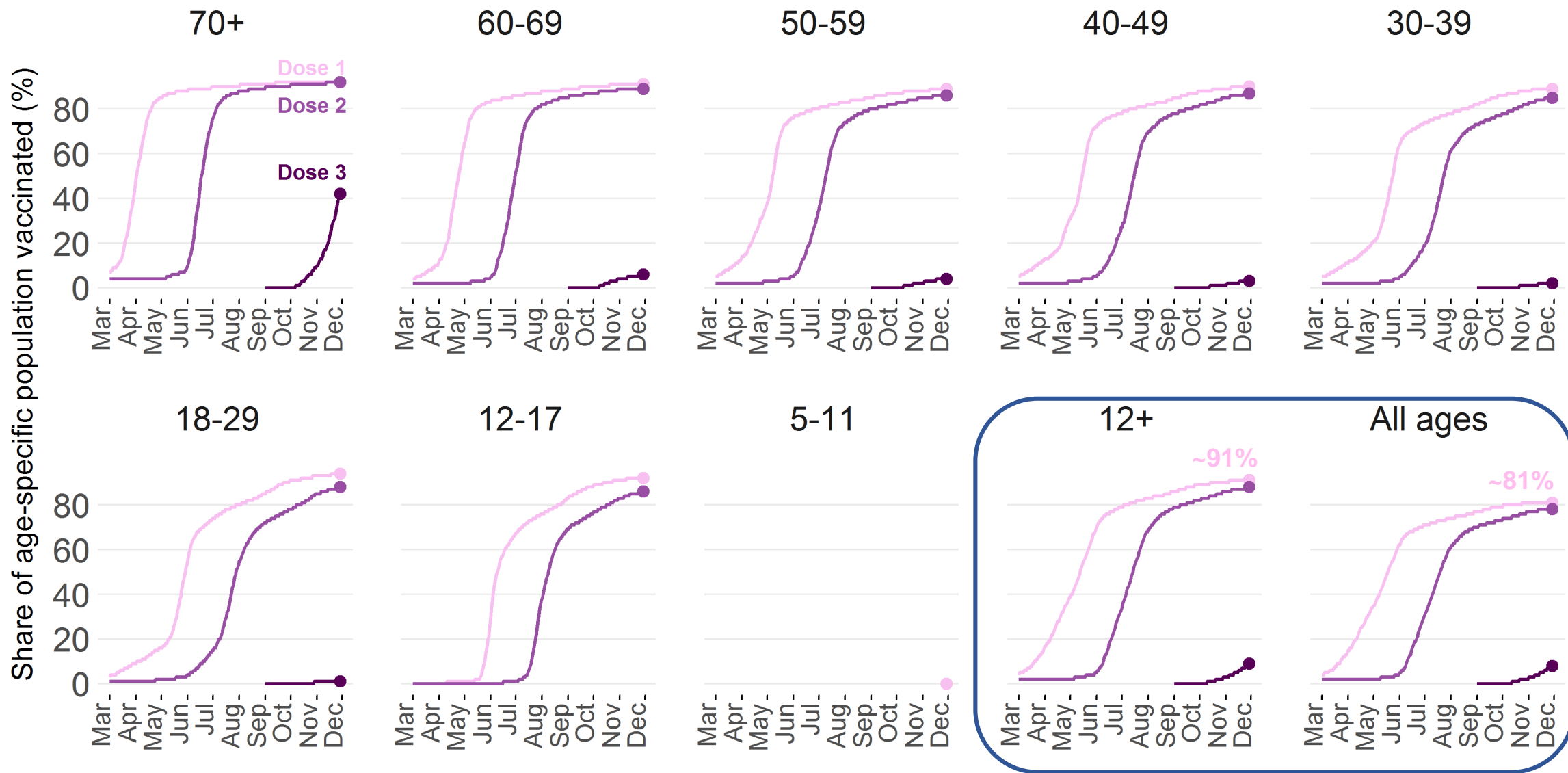
After adjusting for age, **unvaccinated** individuals continue to be at a significantly higher risk of diagnosed infection, hospitalization, critical care admission and death from COVID-19 compared with **2-dose vaccinated**

Relative rates fluctuate over time. These figures do not represent vaccine effectiveness.



Data include cases from Nov 03-Nov 30, and hospitalizations, critical care admissions and deaths from Oct 31-Nov 27, 2021

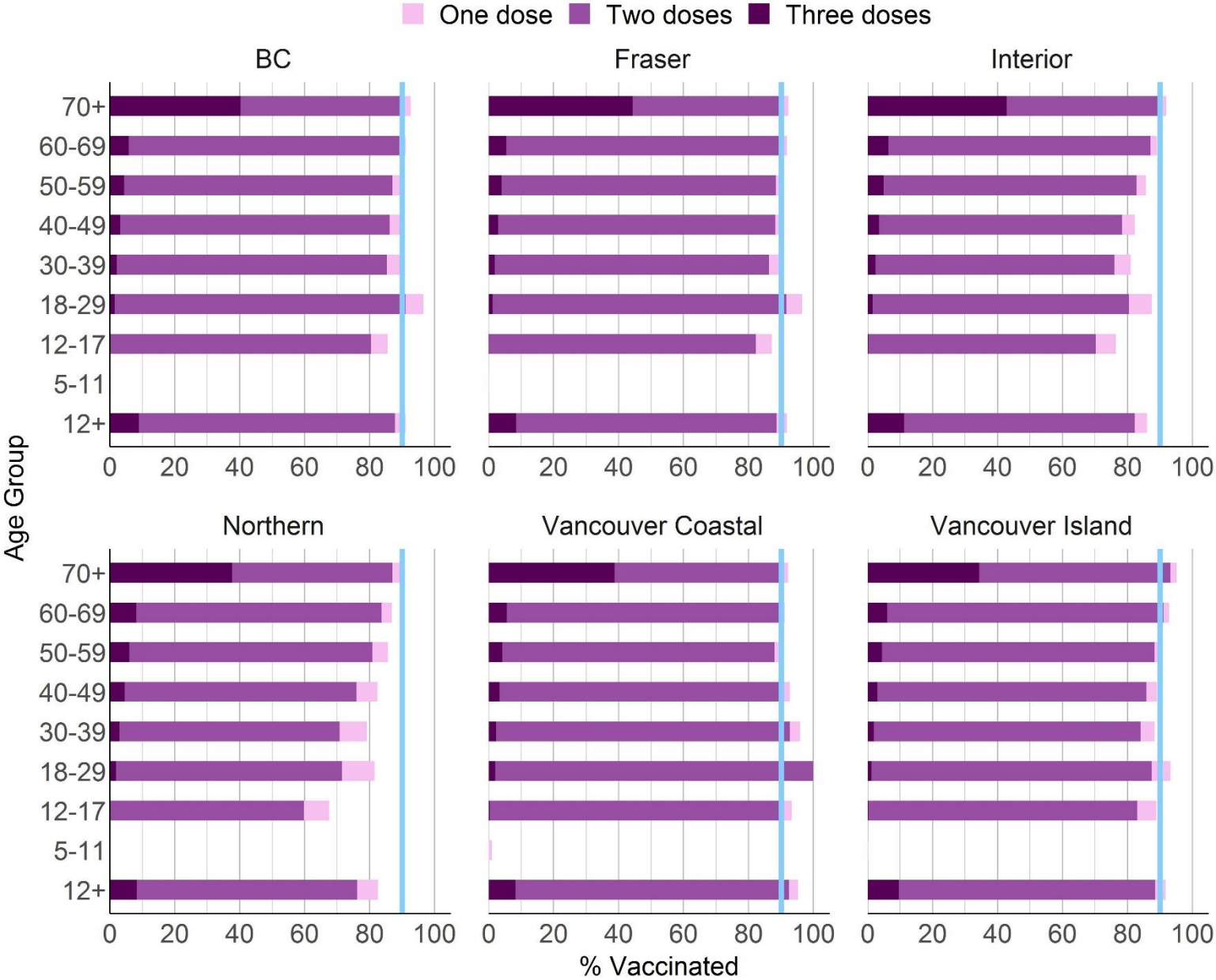
Vaccination progress in BC over time by age group and dose number up to Nov. 30, 2021



Data updated 2021-11-30
Data Source: Provincial Immunization Registry, PHSA

Vaccination progress in BC and by Health Authority as of Nov. 30, by age group and dose number (%)

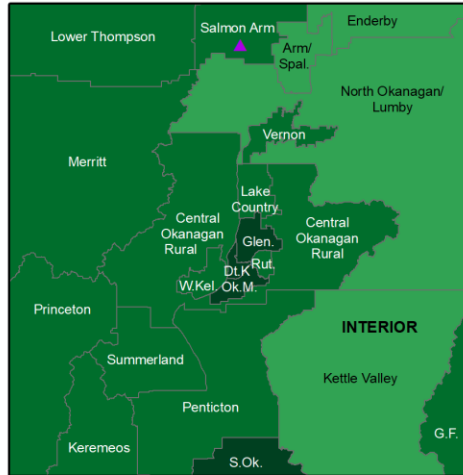
Denominator for this graph is Client Roster maintained by the BC Ministry of Health. Client Roster population data are sourced from a list of all residents registered with Medical Services Plan as of March 12, 2021. Since this date, people may have moved, permanently or temporarily, and have been vaccinated or reported their vaccination status. As a result, there are areas in BC where there will be more people vaccinated than there were living in that area in March 2021. The Client Roster likely underrepresents new arrivals into a region such as young adults relocating to attend post-secondary institutes and workers at major construction project areas. An alternative denominator would be based on projections derived from Census 2016, which is also not representative of the current BC population. There is no perfect denominator.



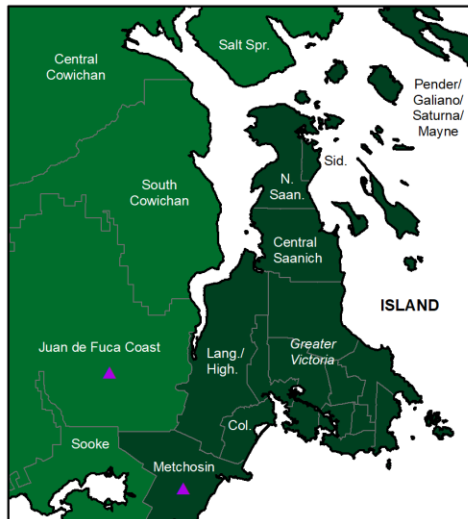
Blue line is for visual reference only

Data updated 2021-11-30
Data Source: Ministry of Health

Okanagan Inset
(Community Health Service Areas)



Greater Victoria Inset
(Community Health Service Areas)



Geographic Distribution of COVID-19 Vaccination Coverage by LHA and CHSA

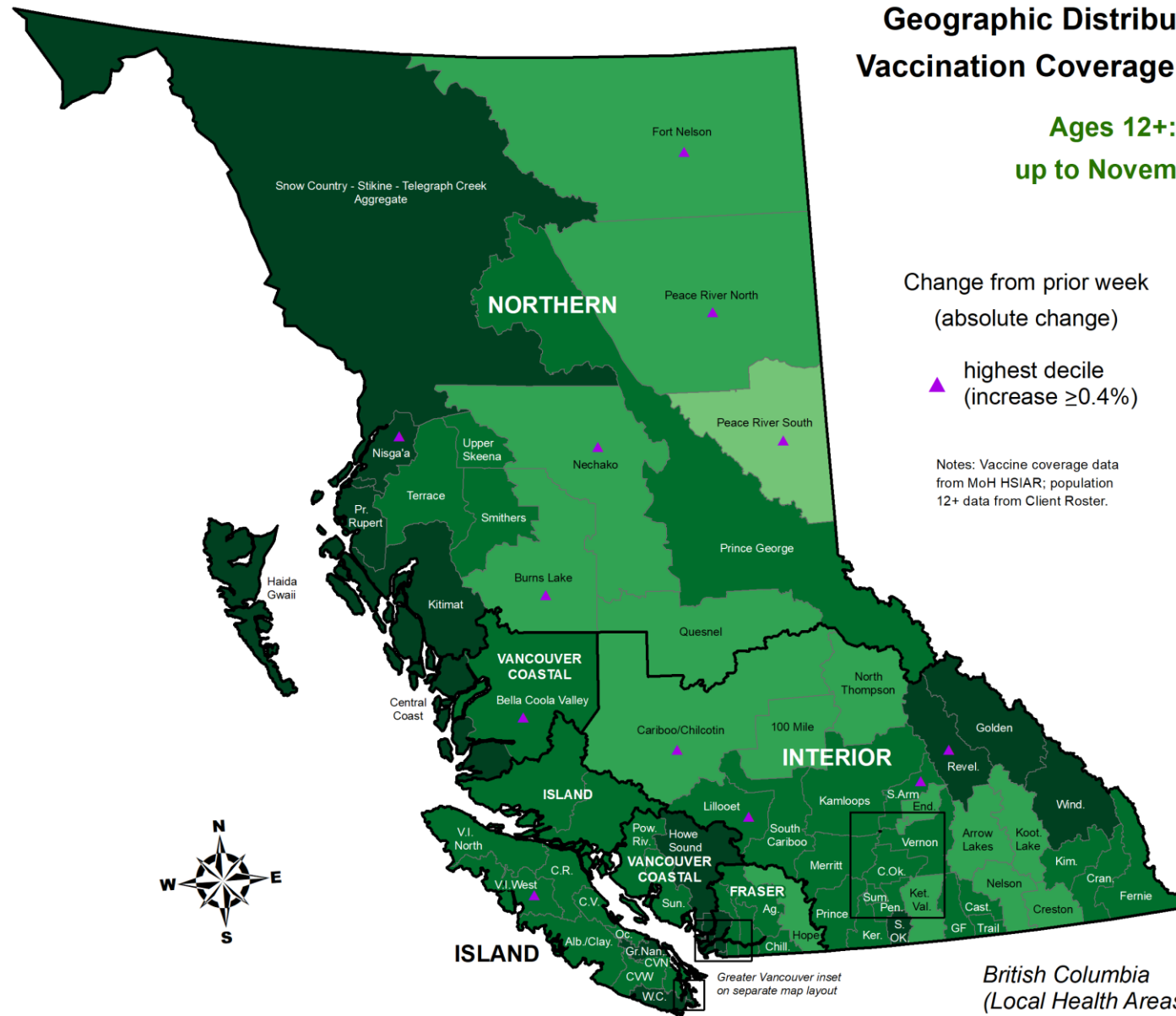
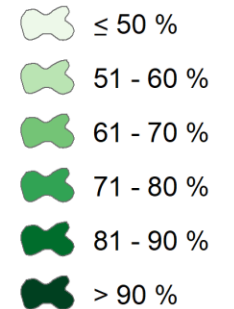
**Ages 12+: 1st Dose
up to November 29, 2021**

Change from prior week
(absolute change)

▲ highest decile
(increase $\geq 0.4\%$)

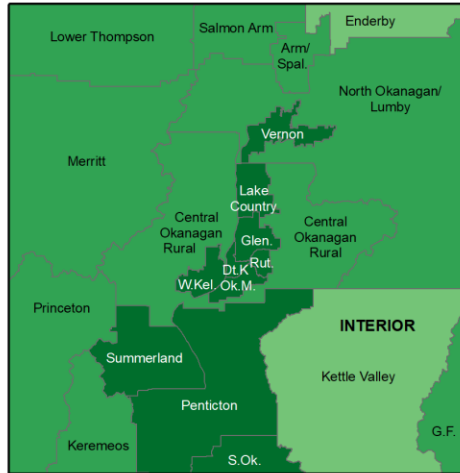
Notes: Vaccine coverage data
from MoH HSIAR; population
12+ data from Client Roster.

Vaccination coverage
rate (%) of persons 12+

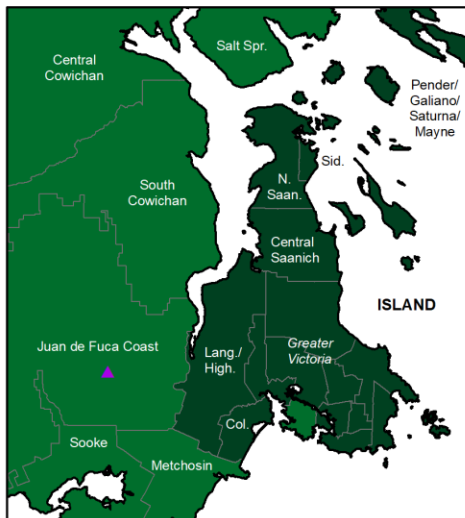


British Columbia
(Local Health Areas)

Okanagan Inset
(Community Health Service Areas)



Greater Victoria Inset
(Community Health Service Areas)



Geographic Distribution of COVID-19 Vaccination Coverage by LHA and CHSA

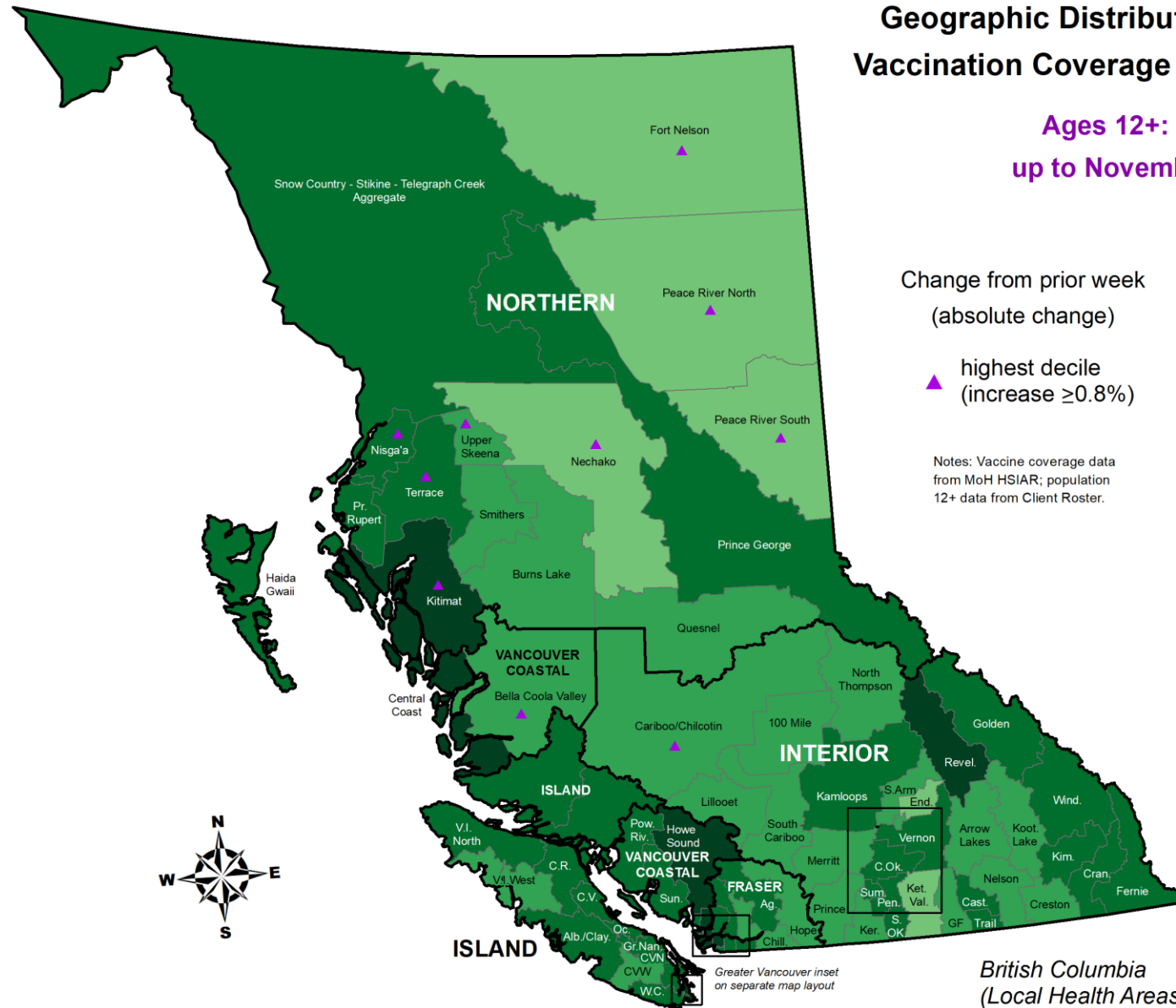
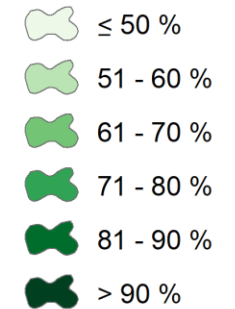
Ages 12+: 2nd Dose
up to November 29, 2021

Change from prior week
(absolute change)

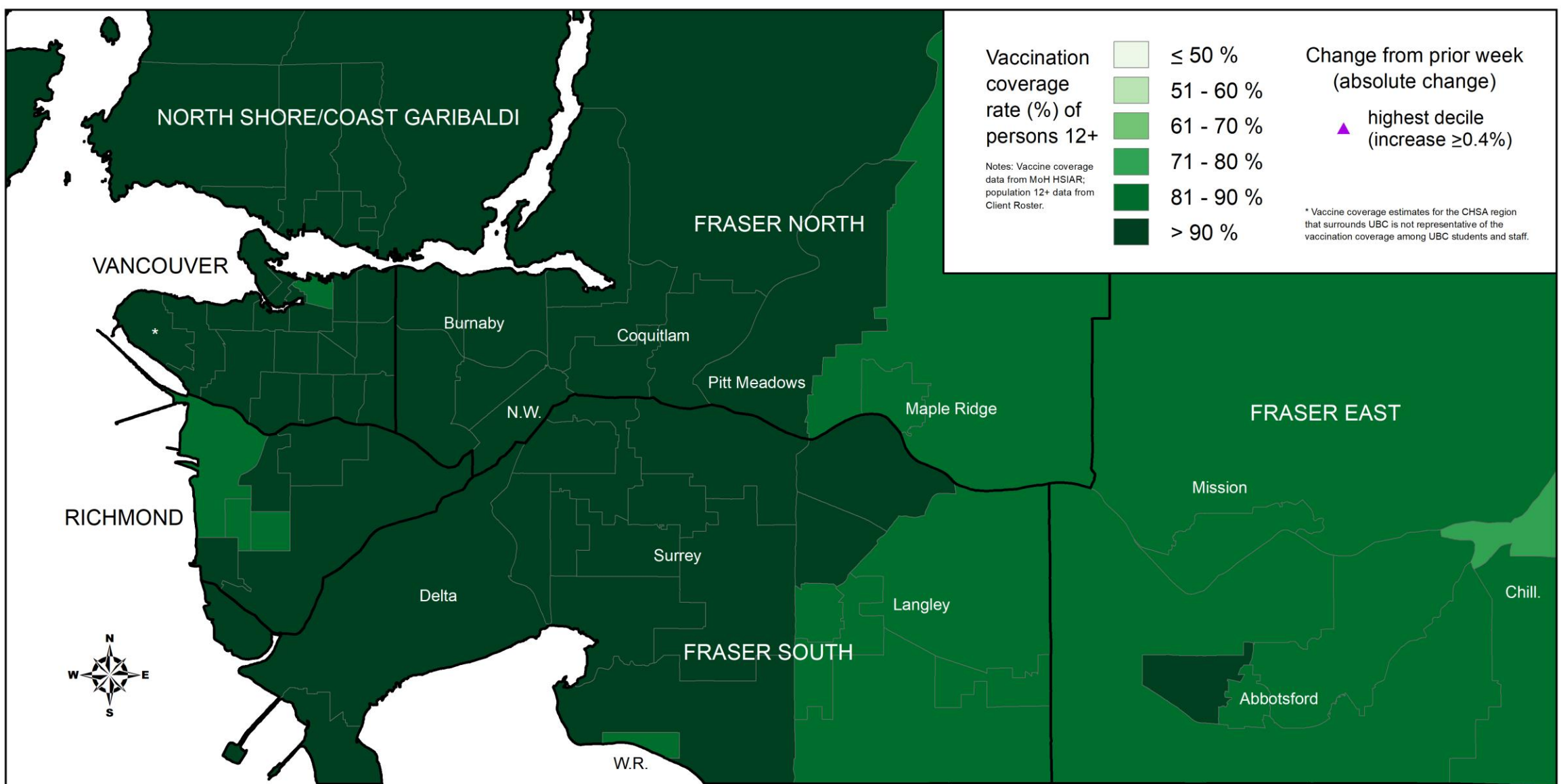
▲ highest decile
(increase $\geq 0.8\%$)

Notes: Vaccine coverage data
from MoH HSIAR; population
12+ data from Client Roster.

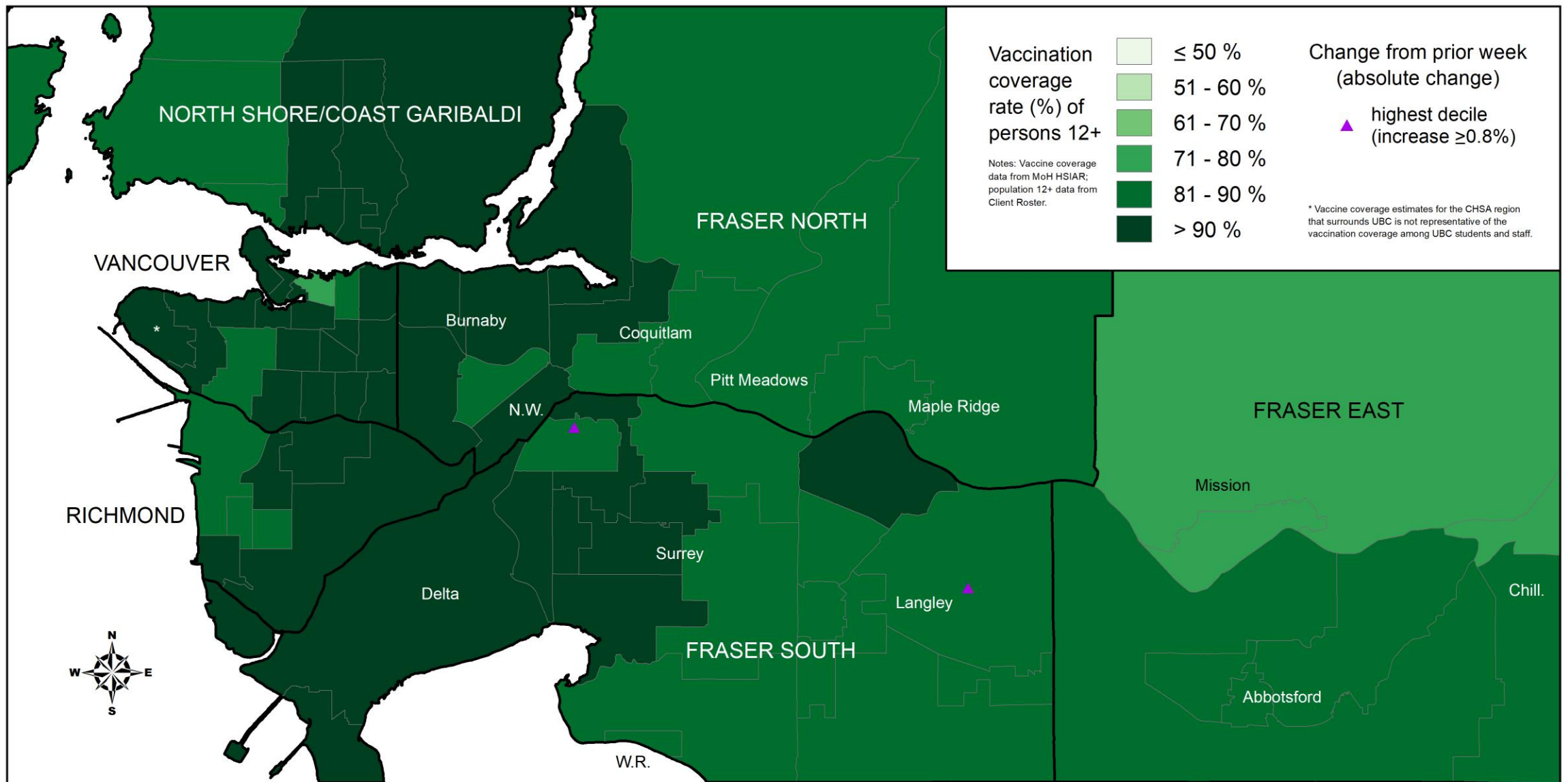
Vaccination coverage
rate (%) of persons 12+



British Columbia
(Local Health Areas)



COVID-19 Vaccination Coverage by CHSA: Ages 12+ 1st Dose (up to November 29, 2021)

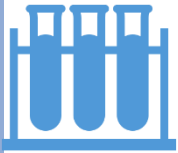


COVID-19 Vaccination Coverage by CHSA: Ages 12+ 2nd Dose (up to November 29, 2021)

Lab - Key Messages

- **Test positivity** among publicly funded tests continues to slowly decline (~4.9%)
 - Test positivity varies by HA, ranging from 3% in VCH to 16% in NH
 - Test positivity and incidence are increasing in North Vancouver Island
- Publicly funded **testing** continue to slowly decline (~50K total public tests this week)
- The provincial weekly median **turnaround time** (time from specimen collection to lab result) is low at 13 hours, indicating good testing capacity. 3 in 4 tests took ≤ 18 hours to result.
- **Delta** sublineages AY.25 and AY.27 remain the most prevalent COVID-19 variants in BC across all age groups and all health authorities. In the last epi week, Delta consisted of ~100% of all sequenced specimens.
- 1 case of Omicron variant was confirmed this week
- Viral signals from **wastewater** collection sites in Metro Vancouver reflect case trends in these regions

Weekly Summary of ALL lab tests performed



4,621,976

total specimens tested

80,546

new this epi week



↓ 3% relative to last week



229,068

total positive specimens

2,486

new positive this epi week



3.1% positivity
↓ 0.3% absolute change from last week

15 hr

mean turnaround time (TAT)

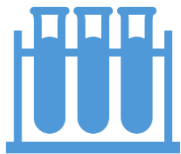
13 [9-18]

Median [Q1 – Q3] TAT



↓ 6% TAT relative to last week

Weekly Summary of Lab tests paid Publicly



3,438,255

total specimens tested

49,784

new this epi week



↓ 4% relative to last week



226,118

total positive specimens

2,426

new positive this epi week

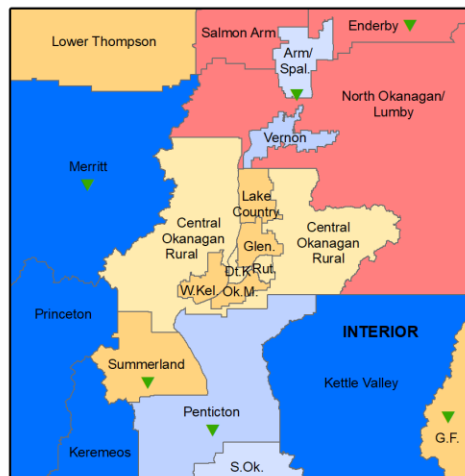


4.9% positivity
↓ 0.4% absolute change from last week

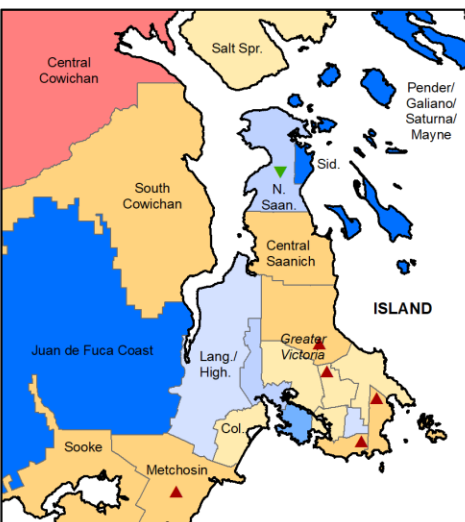
Data source: PLOVER extract at 10:30am on November 30, 2021.

Epi week 47 (Nov 21 – Nov 27)

Okanagan Inset
(Community Health Service Areas)



Greater Victoria Inset
(Community Health Service Areas)



Geographic Distribution of COVID-19 Testing Positivity by LHA and CHSA

Recent 7-Days Testing
November 24 to 30, 2021

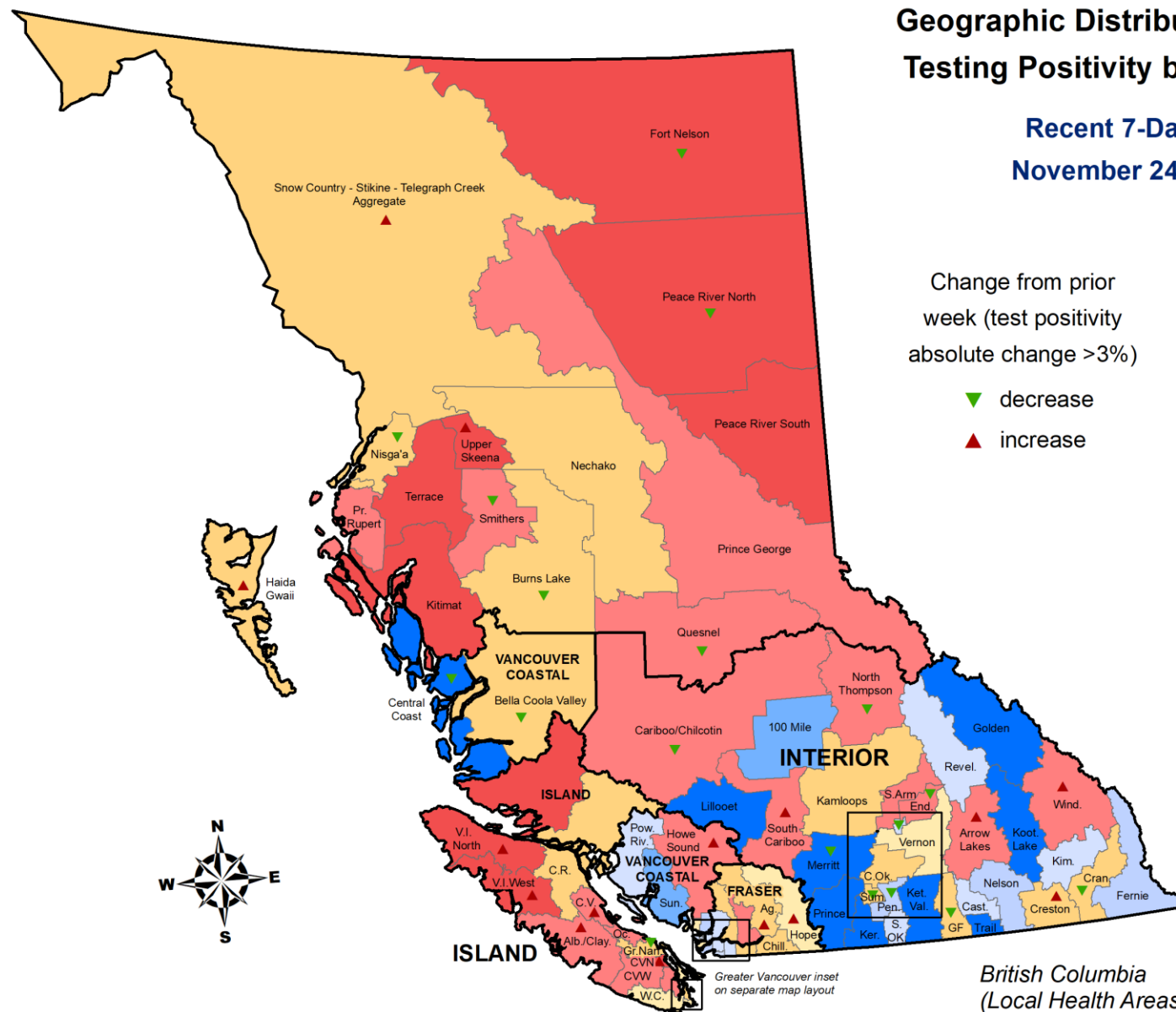
Change from prior
week (test positivity
absolute change >3%)

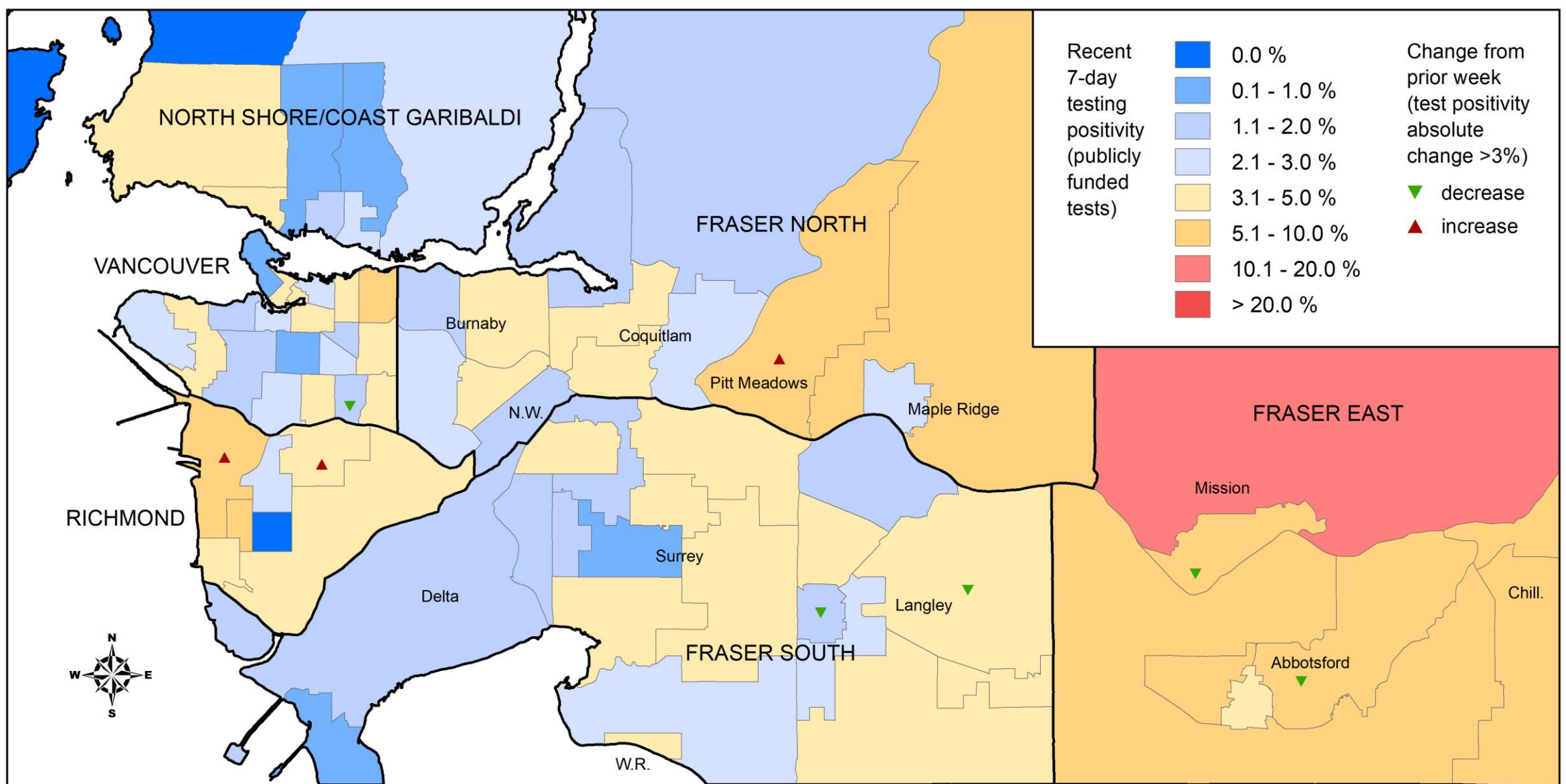
- ▼ decrease
- ▲ increase

Test positivity rate

- 0.0 %
- 0.1 - 1.0 %
- 1.1 - 2.0 %
- 2.1 - 3.0 %
- 3.1 - 5.0 %
- 5.1 - 10.0 %
- 10.1 - 20.0 %
- > 20.0 %

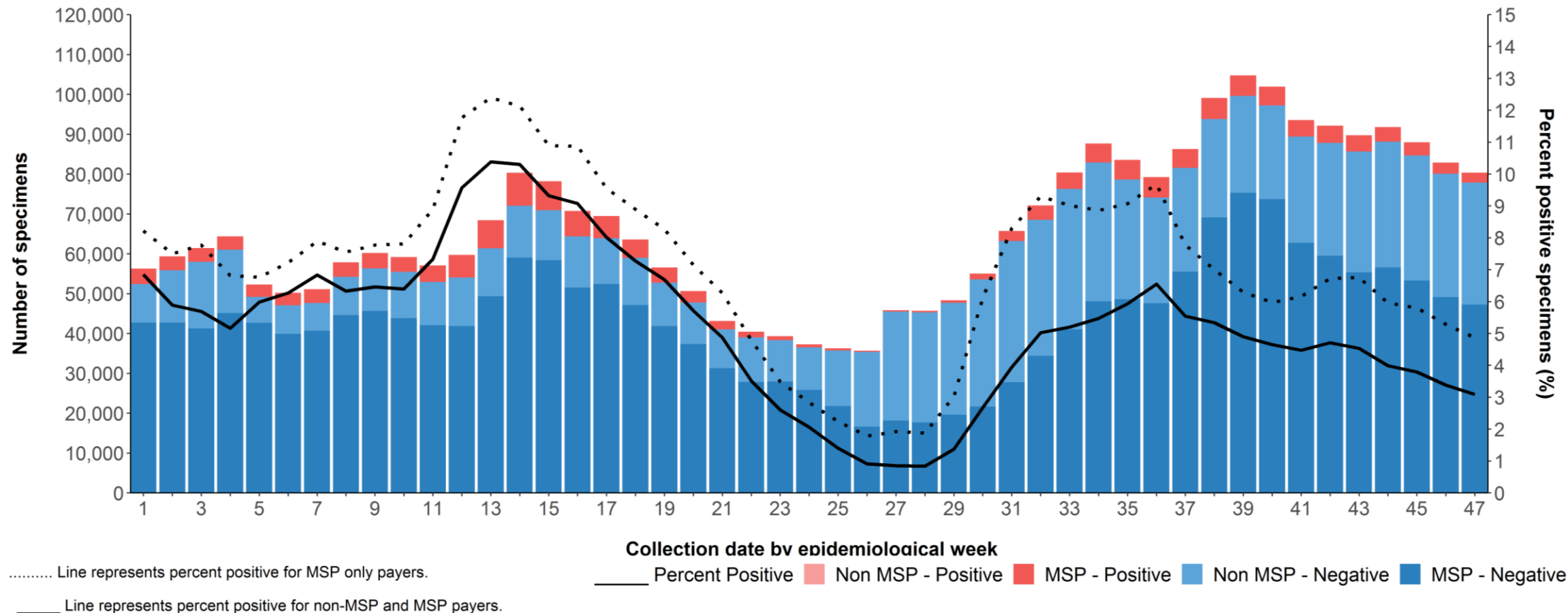
Data source: BCCDC Public Health Laboratory PLOVER system (publicly funded tests performed). Data are by testing result date, and location of client's residence or if missing, physician's address.





COVID-19 Recent 7-Day Test Positivity by CHSA (November 24 to 30, 2021)

Among publicly funded specimens, percent positivity (4.9% this week) and number of specimens tested continue to slowly decline.

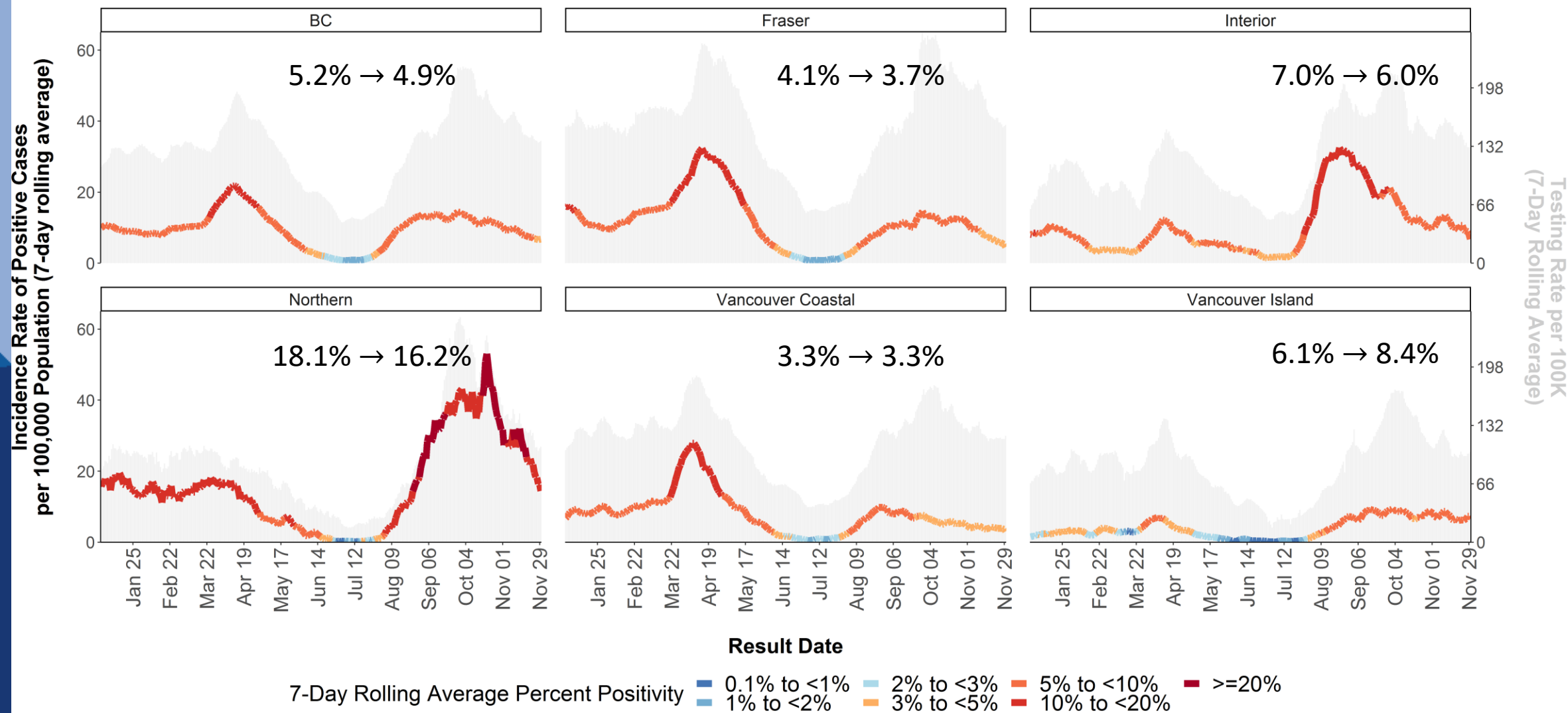


Note: Invalid (n = 1890) and indeterminate (n = 7596) results have been excluded

Data source: PLOVER 01-Dec-2021

Percent positivity is declining provincially, but increasing in VIHA. Testing rates are declining but remain elevated across province.

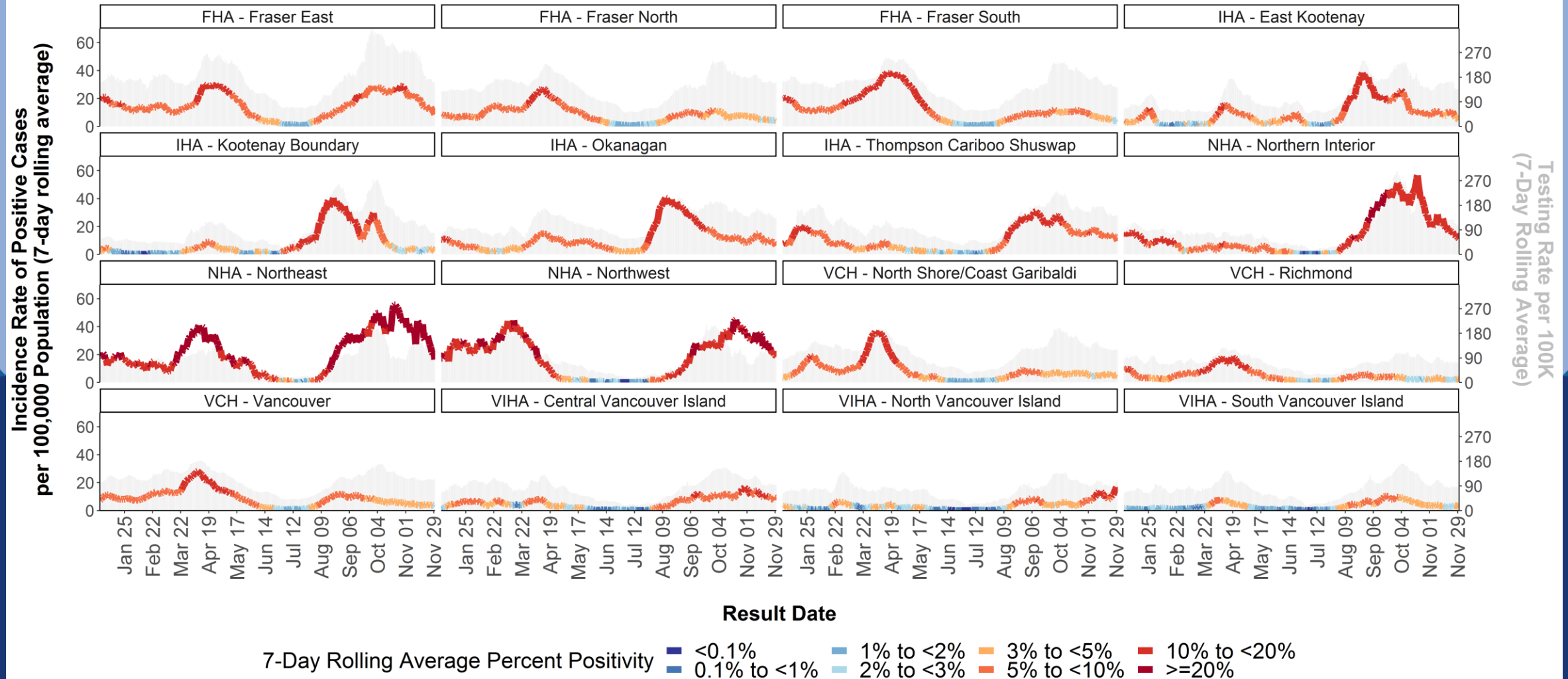
Case incidence rate, test percent positivity, and testing rate (Public Payers Only). Jan 1 2020 - Nov 30, 2021.



Data source: PLOVER 30-Nov-2021

Test positivity is >10% in NH but is decreasing; in North Vancouver Island, test positivity is >10% and incidence is increasing

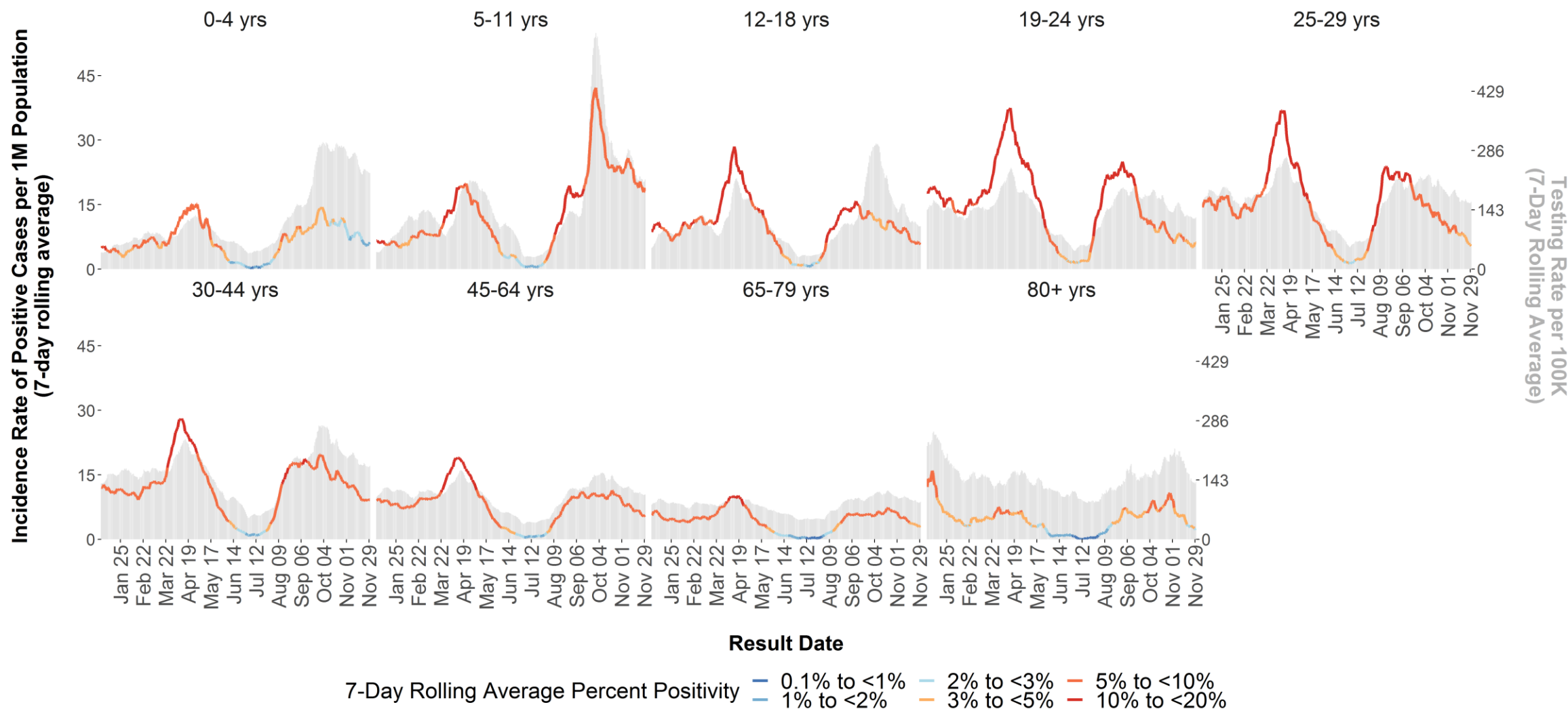
Case incidence rate, test percent positivity, and testing rate by HSDA (Public Payers Only).
Jan 1 2021 - Nov 30, 2021.



Data source: PLOVER 30-Nov-2021

Percent positivity highest among 5 to 18 years and 30-64 years (between 5 and 10%).

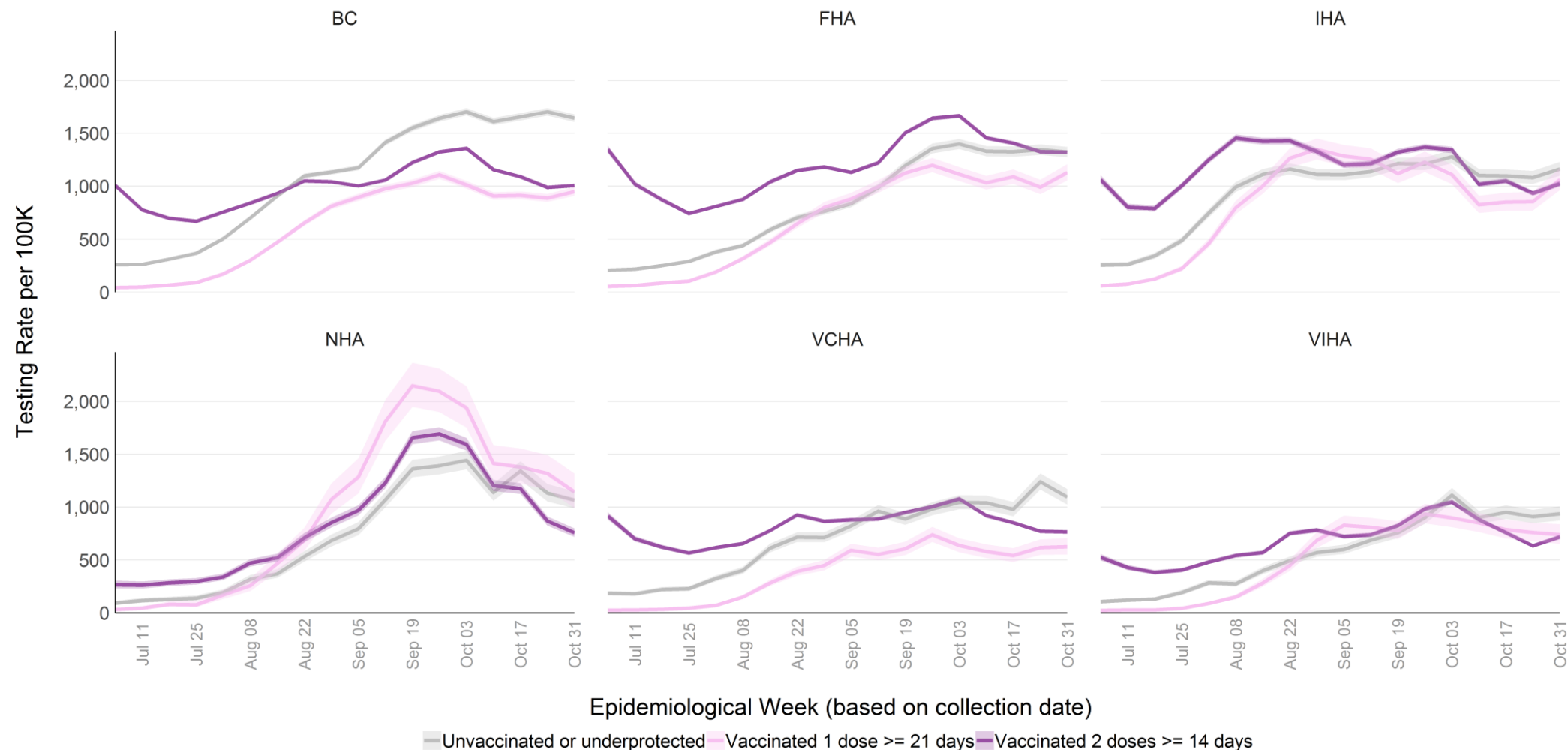
Case incidence rate, test percent positivity, and testing rate by age (Public Payers Only). Jan 1 2020 - Nov 30, 2021.



Data source: PLOVER 30-Nov-2021

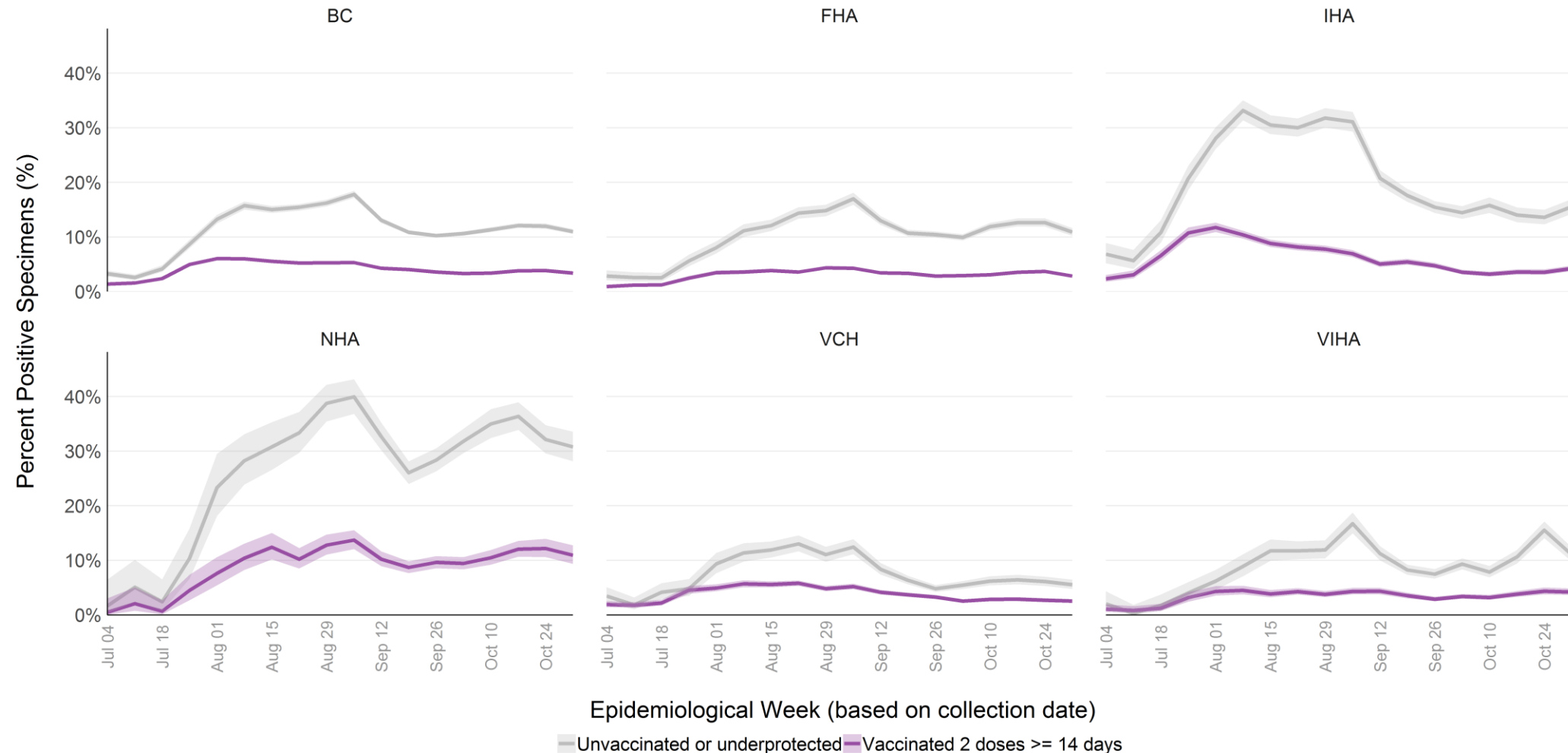
In every region, trends in testing rates are broadly similar by vaccination status

MSP Only Testing Rate by Vaccination Status and Epiweek of Collection Date
(12+ year olds) Jul 4 - Nov 6, 2021

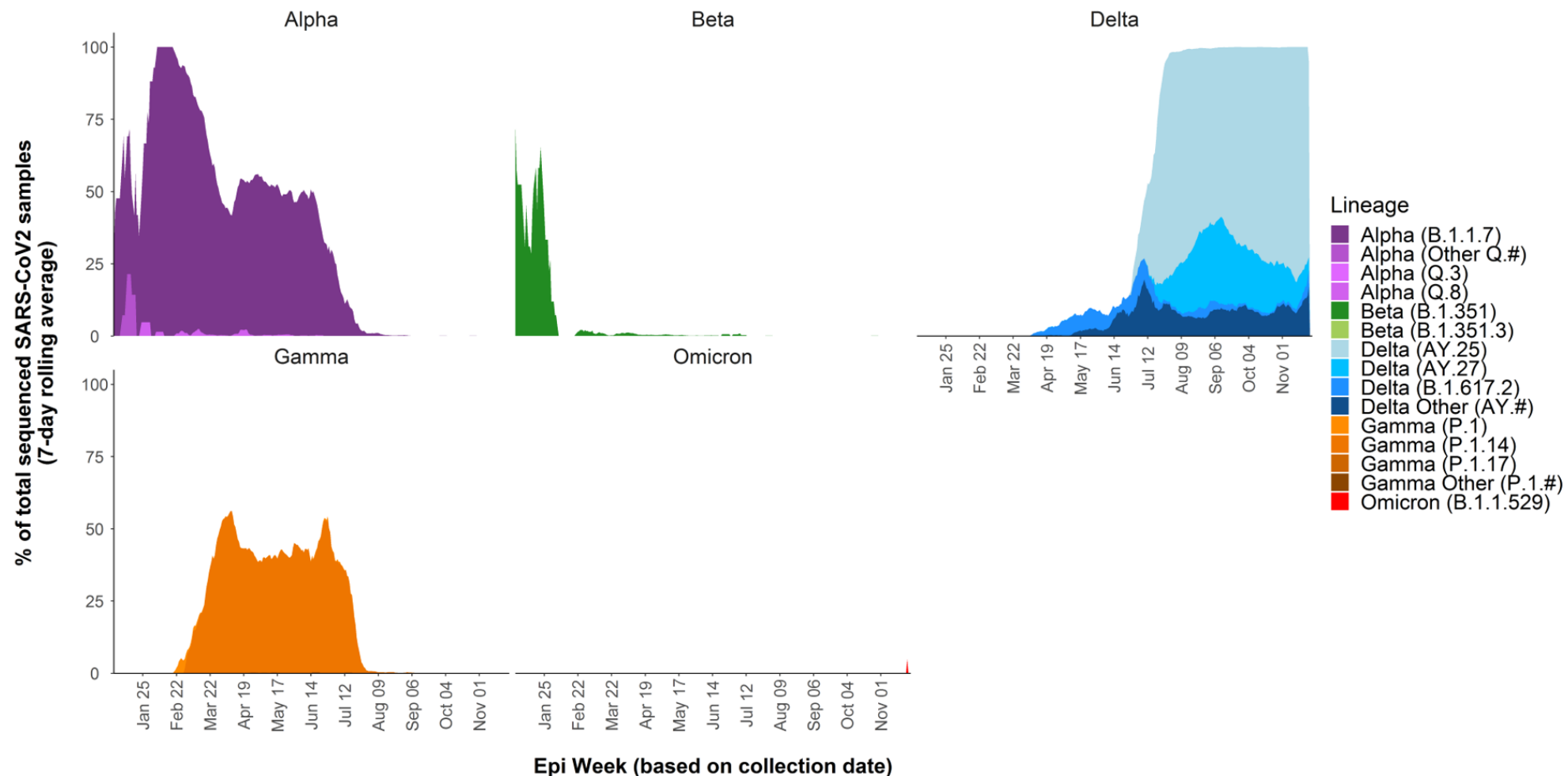


In every region over the past 3 months, test positivity for publicly funded tests has been consistently ~2-3x higher among the unvaccinated than in fully vaccinated individuals

MSP Only Percent Positive Specimens by Vaccination Status and Epiweek of Collection Date
Jul 4 - Nov 6, 2021

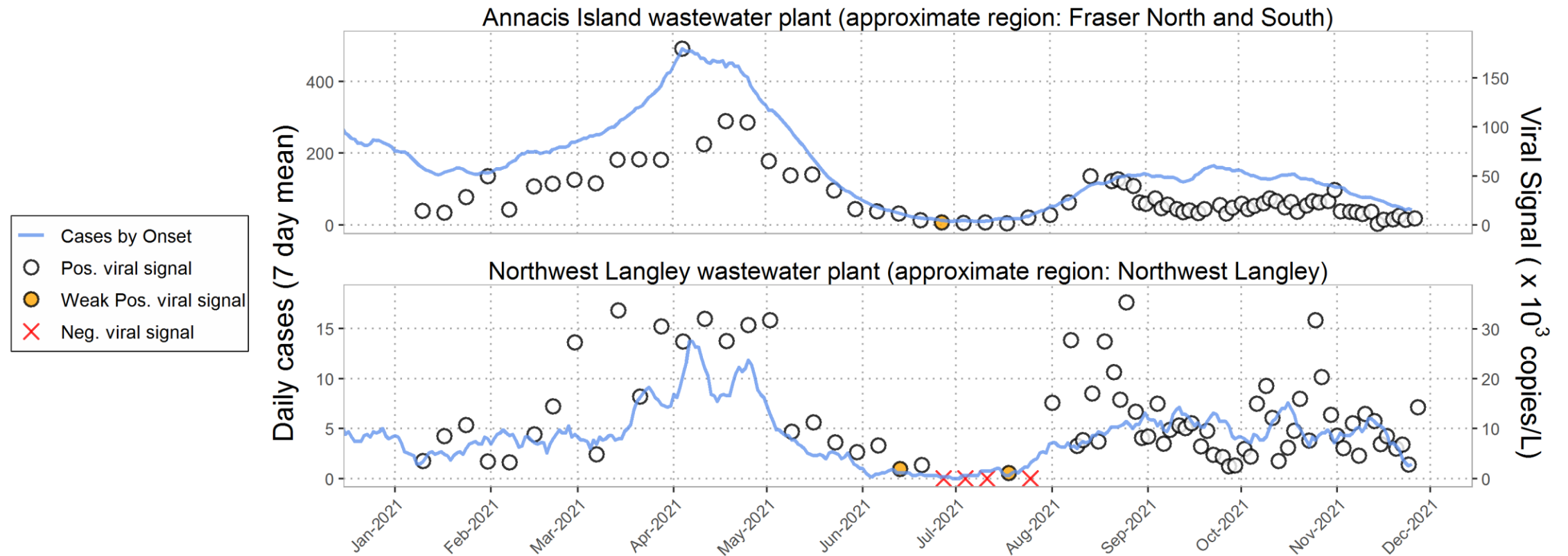


Delta is the most prevalent COVID-19 variant in BC representing ~100% of all sequenced specimens in most recent week; there are 2 main Delta sub-lineages: AY.25 and AY.27



indicates an additional numerical value (e.g. AY.1)

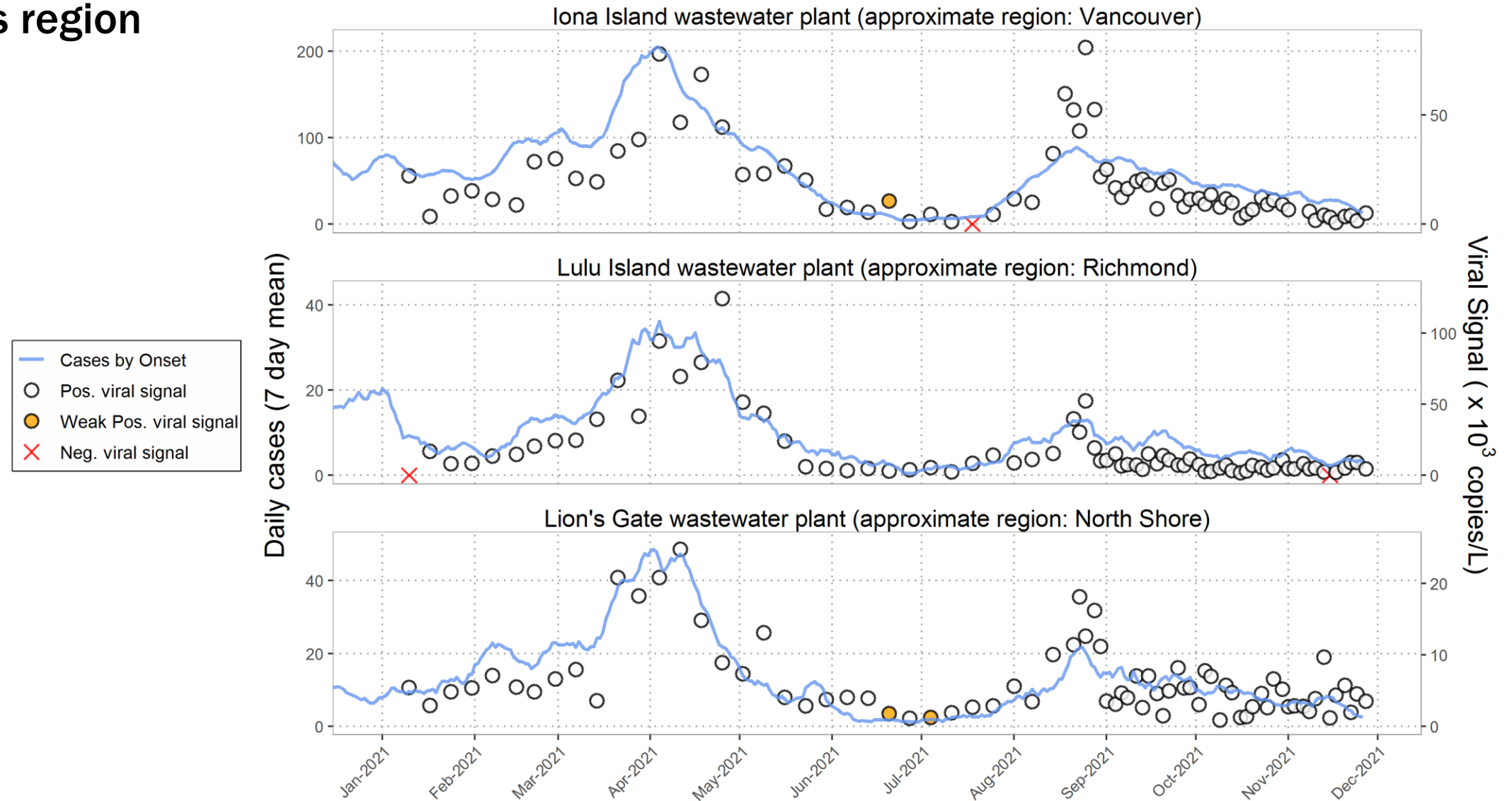
In FHA, the viral signal from wastewater reflects the trends in case counts in this region



Time-series plots show weekly or bi-weekly viral signals from each wastewater plant (right y-axis), overlaid with rolling 7-day mean of daily new cases within wastewater catchment area (left y-axis).

Plot title shows wastewater plant name, followed by approximate catchment area.

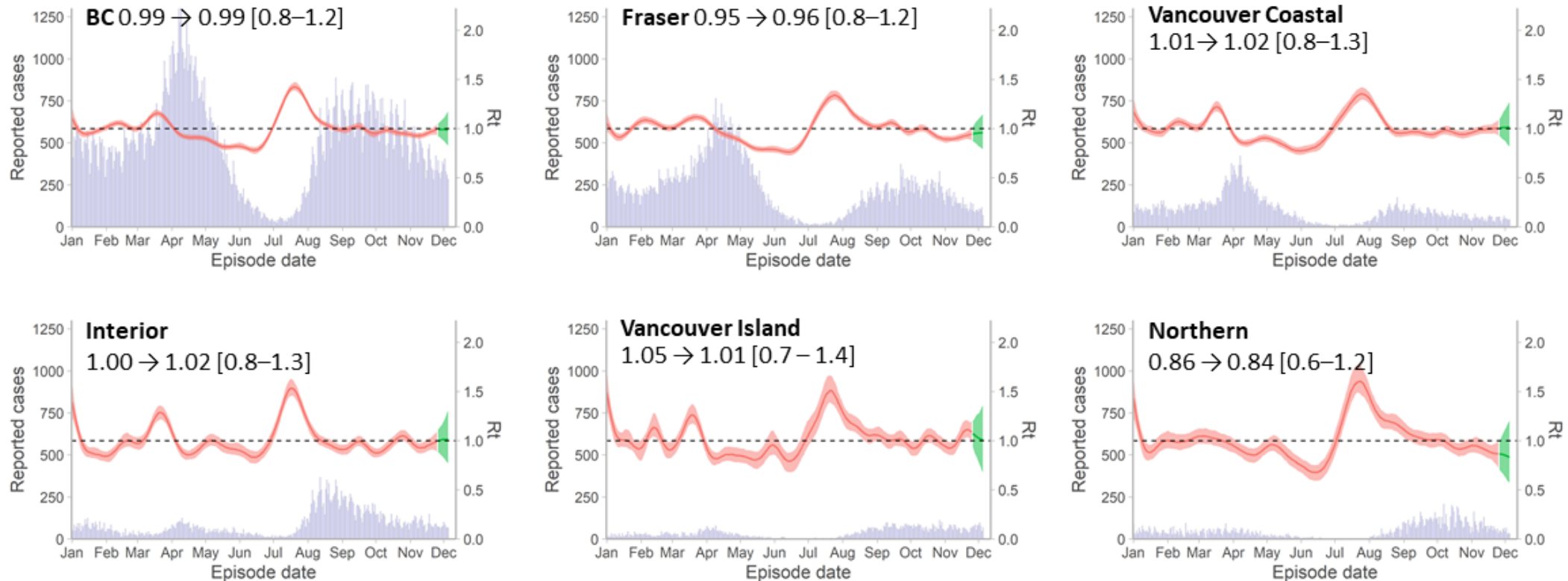
In VCH, the viral signal from wastewater reflects the declining trends in case counts in this region



Time-series plots show viral signals from each wastewater plant (right y-axis), overlaid with rolling 7-day mean of daily new cases within wastewater catchment area (left y-axis). Plot title shows wastewater plant name, followed by approximate catchment area.

Dynamic modeling: recent trends

Modelling indicates that R_t is hovering near 1 in most regions. Estimates are shown for last week → this week, with 90% range of possible values given next to most recent estimate.



Solid line: median R_t , modeled using all reported cases up to Dec 5, 2021; Red band: 5%-95% credible interval; Green band: estimate based on partial data – each week, current estimates are updated with new data to provide a clearer understanding of the trend. Purple bars: all reported cases. Only January 2021 onward shown here. Data source: BCCDC HA linelist.

Pediatric Report - Key Messages

- Case numbers in <18 years remain relatively stable
 - Incidence varies regionally and by pediatric age group
- Case rates are highest in regions with lower 12+ vaccine coverage
- Severe outcomes are rare in children

Also see the Data for K-12 Schools November report posted on the BCCDC website:

http://www.bccdc.ca/Health-Info-Site/Documents/COVID_sitrep/K12_Situation_Report/SitRep_K-12_November_2021.pdf

Nov 25 to Dec 01: Pediatric COVID-19 Profile

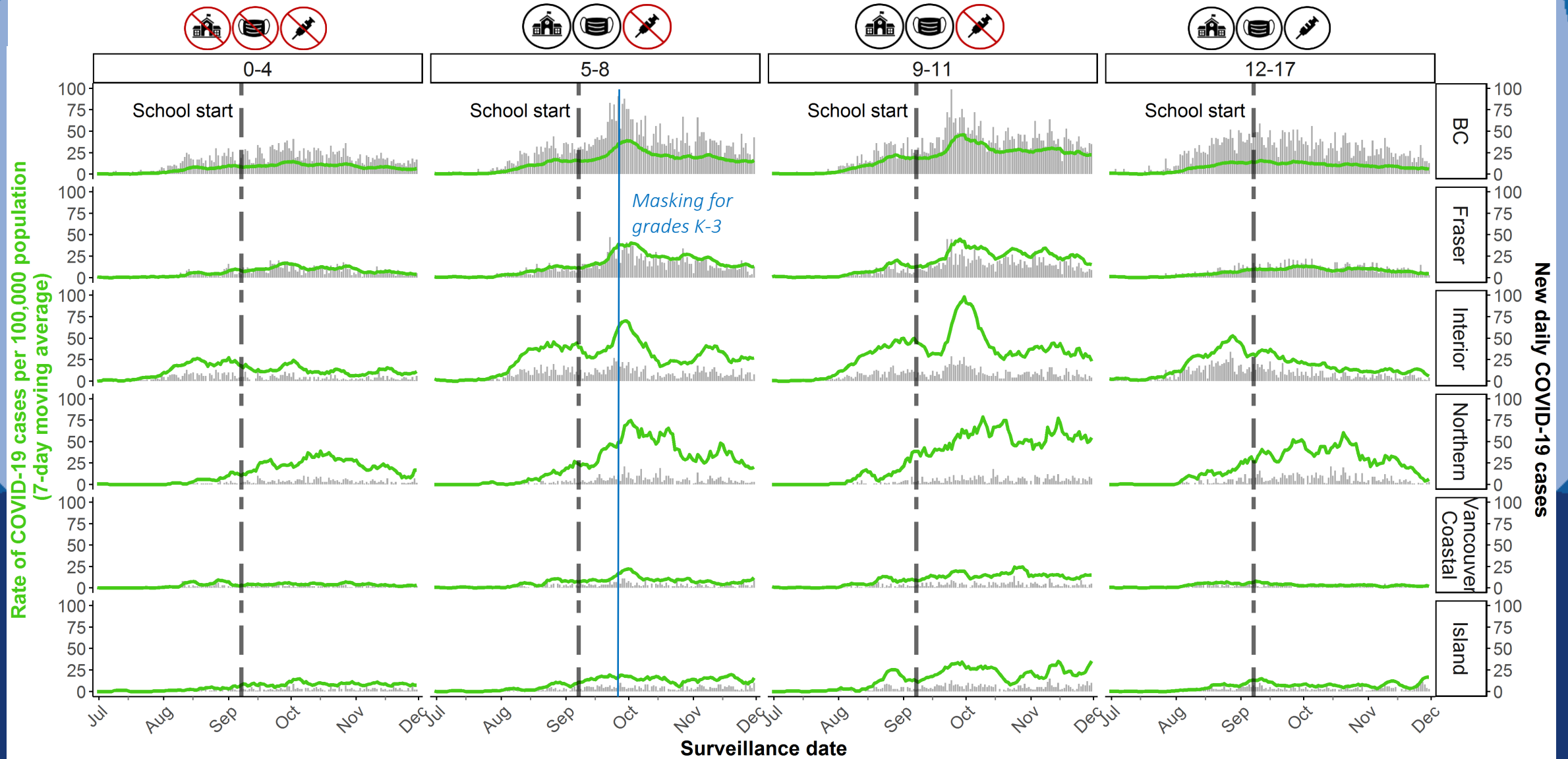


Age group: 0-4		Age group: 0-4		Age group: 0-4		Age group: 0-4	
6,014	total cases	126	ever hospitalized	12	ever in critical care	2	total deaths
100	new this week	2	new this week	0	new this week	0	new this week
Age group: 5-11		Age group: 5-11		Age group: 5-11		Age group: 5-11	
16,483	total cases	63	ever hospitalized	5	ever in critical care	0	total deaths
451	new this week	0	new this week	0	new this week	0	new this week
Age group: 12-17		Age group: 12-17		Age group: 12-17		Age group: 12-17	
13,094	total cases	57	ever hospitalized	8	ever in critical care	0	total deaths
133	new this week	1	new this week	0	new this week	0	new this week

* New hospitalizations and critical care census numbers are as of Nov 30 2021

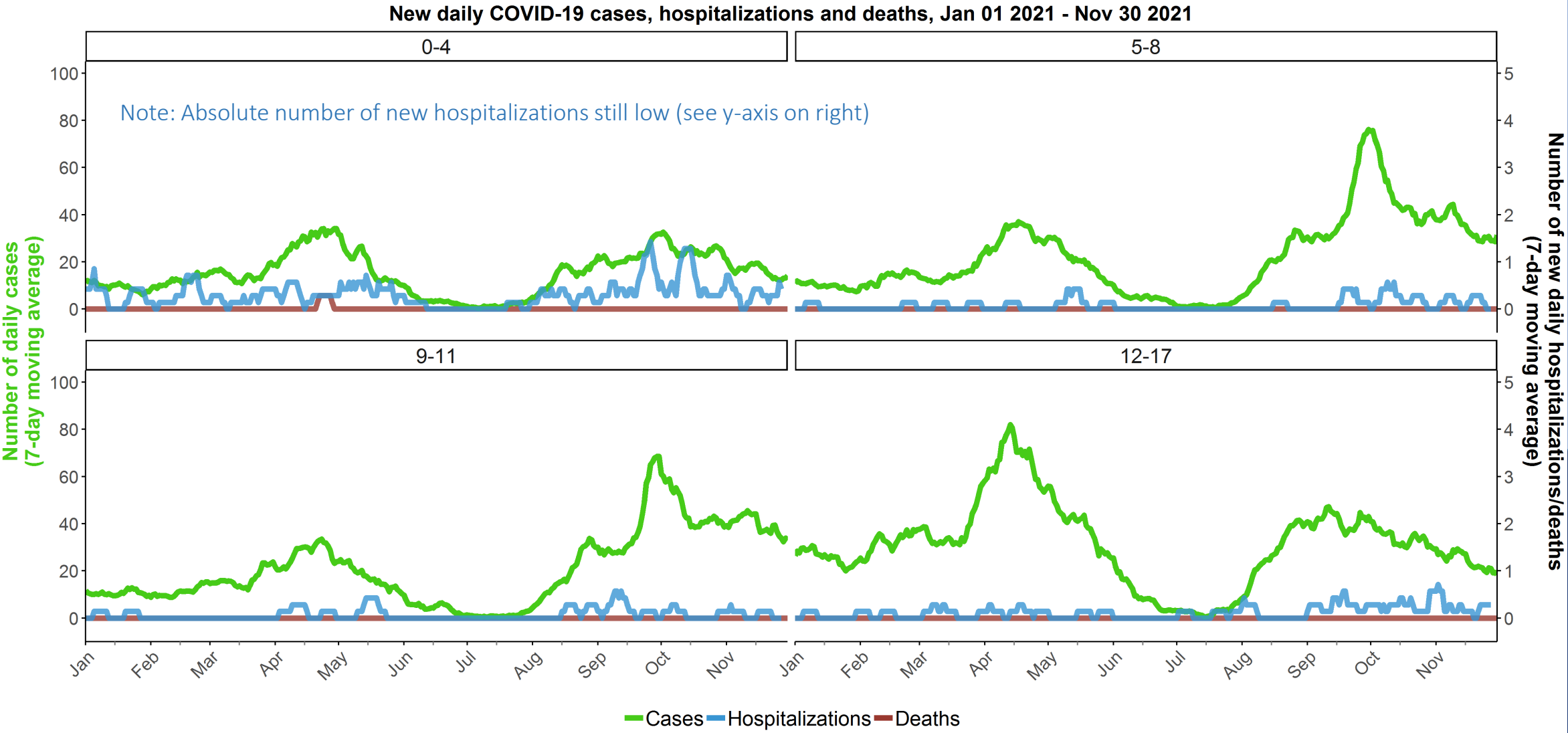
* New cases and new deaths are net new between Line lists of Nov 24 and Dec 01

Incidence varies regionally and by pediatric age group



* Data based on surveillance date (i.e. lab result date, or when not available, date reported to public health)
 Date range: Jul 01 2021 - Nov 30 2021
 Data source: PHRDW Dec-01-2021

Number of new daily hospitalizations remains very low and stable; deaths are extremely rare



* Data are by surveillance date for cases and deaths, and admission date for hospitalizations
Data source: PHRDW + BCCW Dec-01-2021

Case rates are relatively stable among children and youth.

Hospitalization rates remain low.



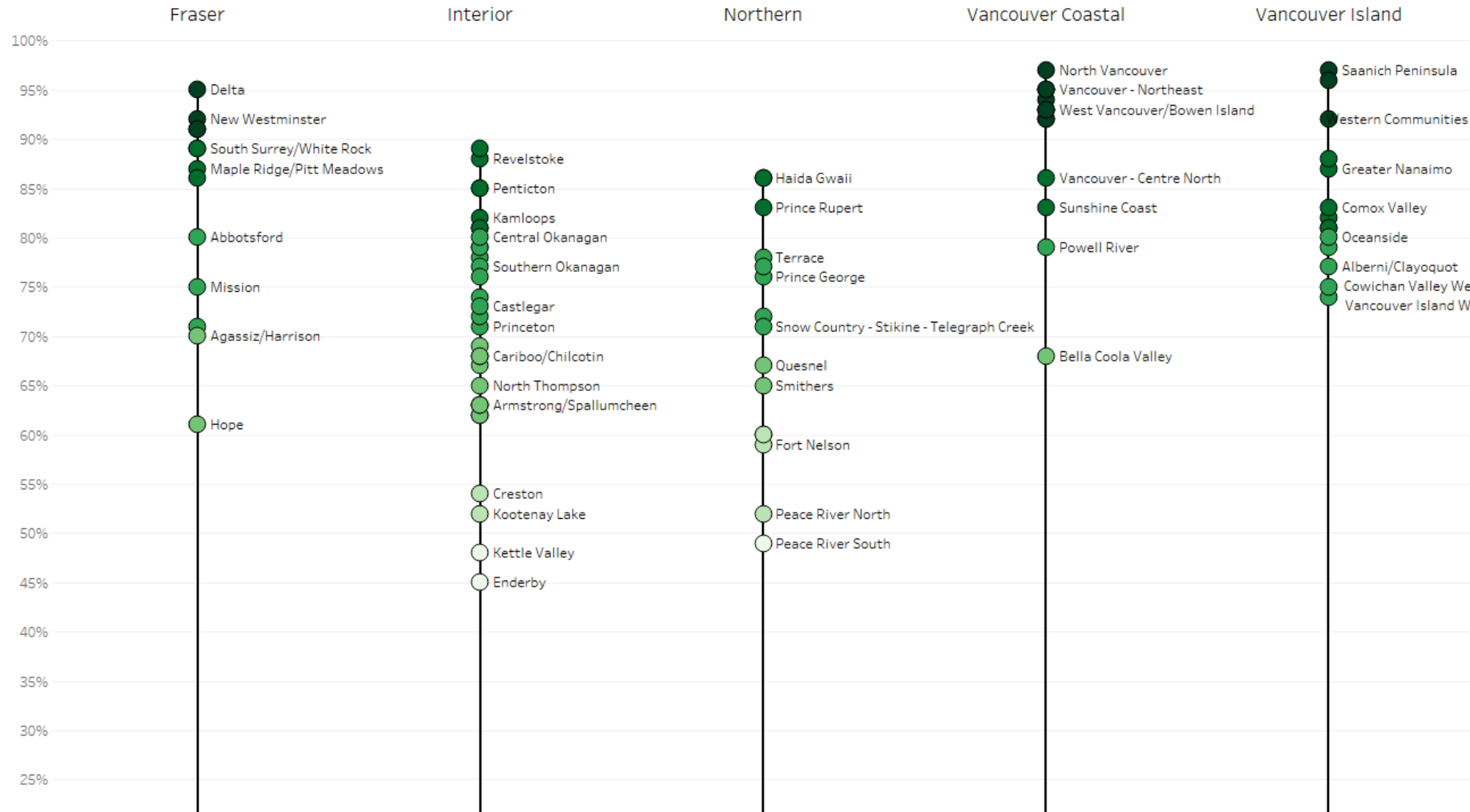
* Data are by surveillance date for cases and deaths, and admission date for hospitalizations
Data source: PHRDW Dec-01-2021

COVID-19 vaccination coverage with 1st dose among 12-17 year olds, by Local Health Area, Nov. 29, 2021

COVID-19 Vaccination Coverage (first dose), 12-17, Nov. 29, 2021

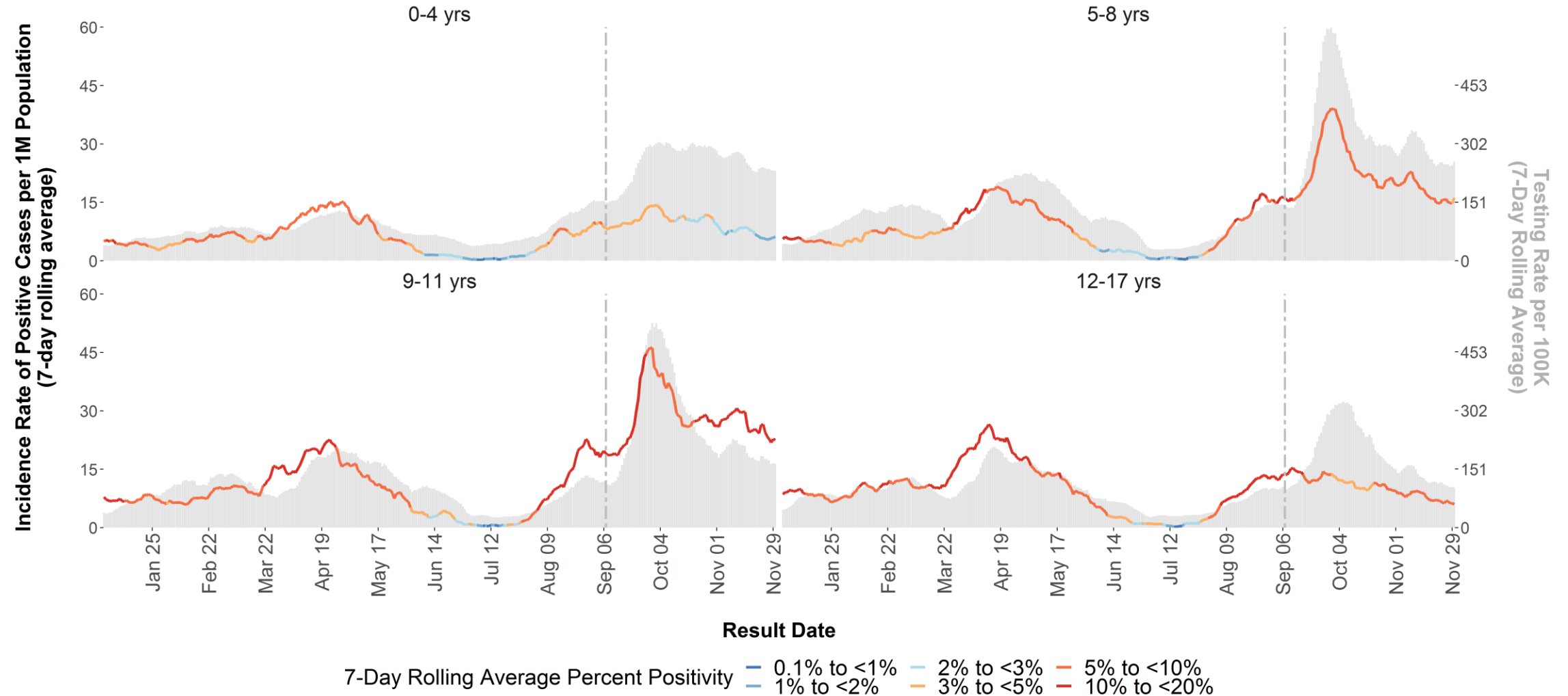
Coverage Color
 <= 50%
 51-60%
 61-70%
 71-80%
 81-90%
 > 90%

Set y axis start 25



Testing rates among 5-17 year olds continue to decrease but remain elevated and stable among 0-4 year olds. Test positivity is highest among 9-11 year olds (>10%) and lowest in the 0-4 year olds (<3%).

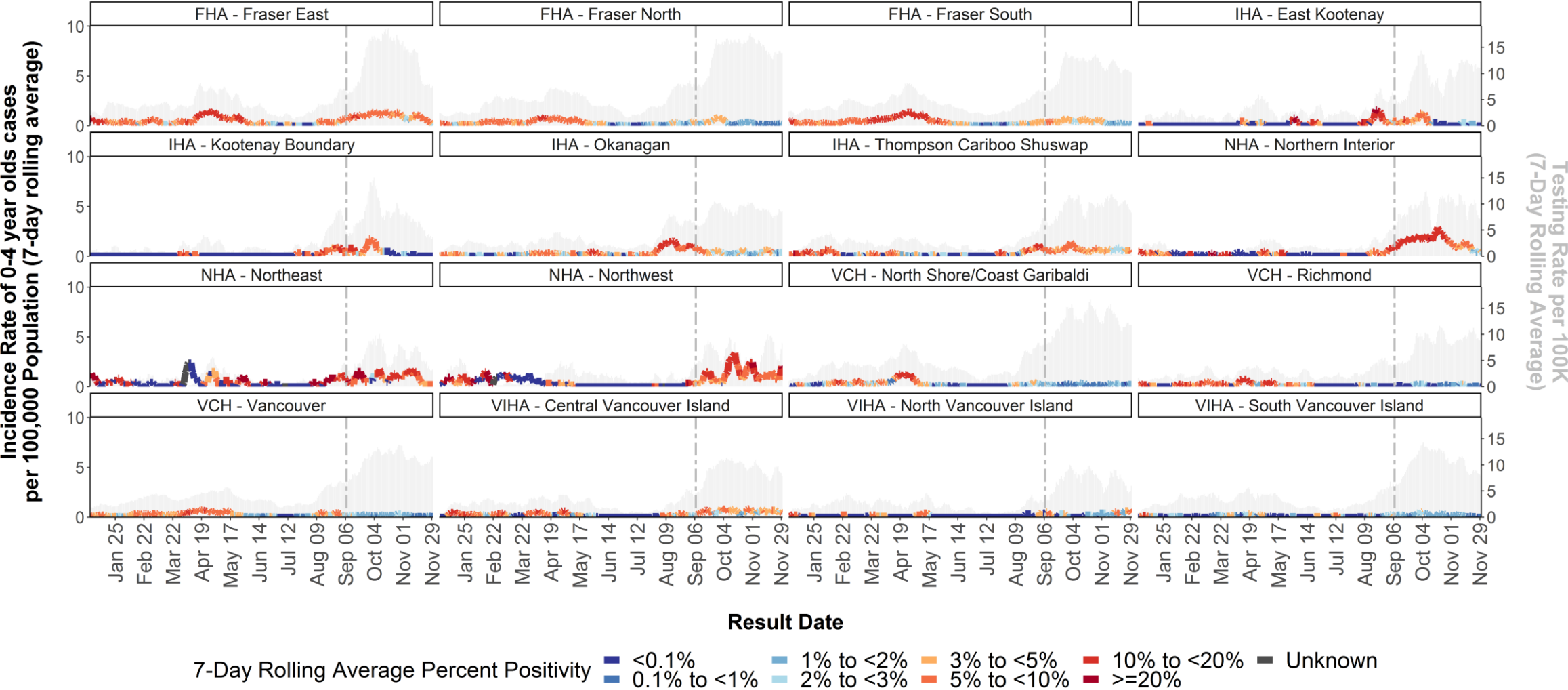
Case incidence rate, test percent positivity, and testing rate by age (Public Payers Only). Jan 1 2020 - Nov 30, 2021.



Data source: PLOVER 30-Nov-2021

Testing rates among 0-4 year olds remain high in all HSDAs. Percent positivity is variable; very low in most regions.

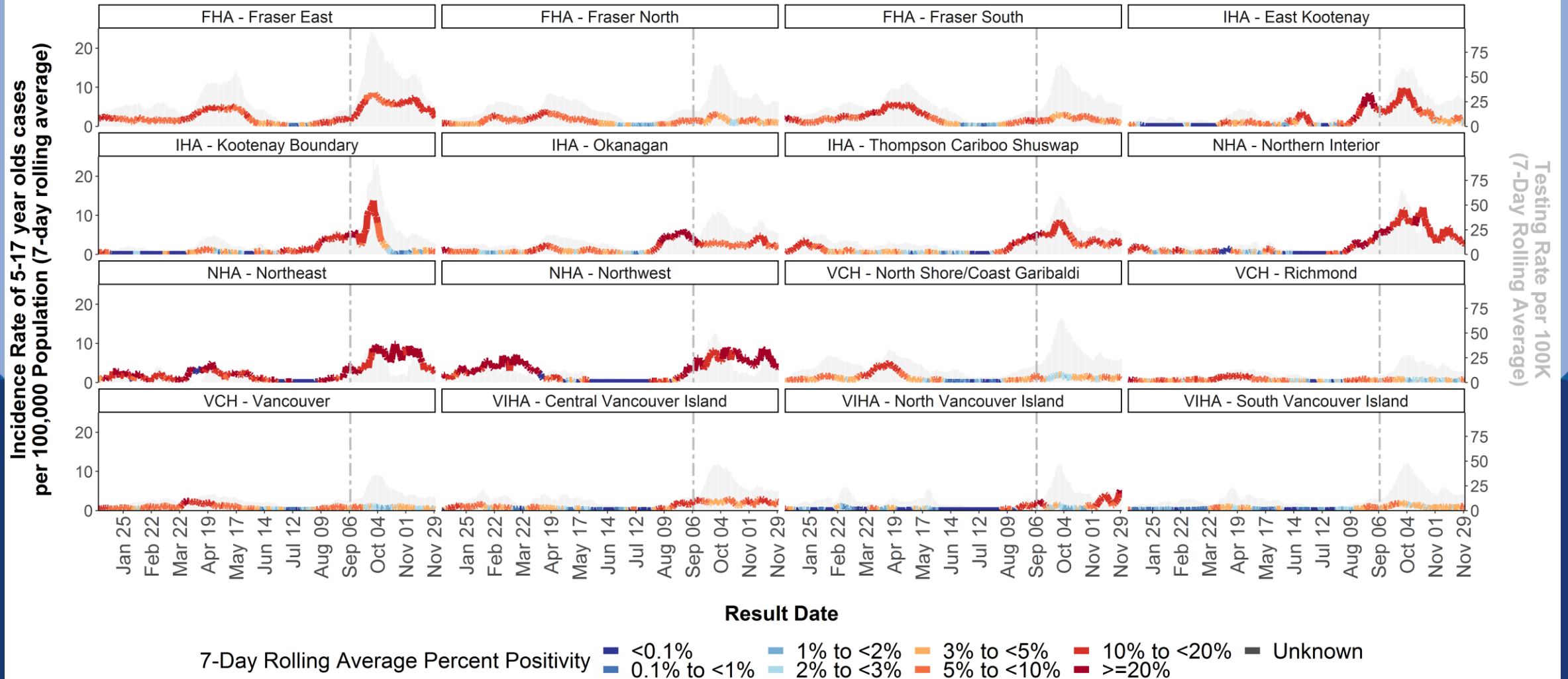
Case incidence rate, test percent positivity, and testing rate by HSDA (Public Payers Only).
Jan 1, 2021 - Nov 30, 2021.



Data source: PLOVER 30-Nov-2021

Percent positivity is high throughout NH.

Case incidence rate, test percent positivity, and testing rate by HSDA (Public Payers Only).
Jan 1, 2021 - Nov 30, 2021.



Data source: PLOVER 30-Nov-2021

Additional Resources

- BCCDC COVID-19 Regional Surveillance Dashboard showing maps, vertical plots, and trends by LHA can be found [here](#)
- More BC COVID-19 data, including the latest Situation Report, maps, and BC COVID-19 public dashboard, can be found [here](#)
- For more information on variants of concern and whole genome sequencing, the latest report is posted [here](#)
- To put BC provincial, Health Authority, and HSDA trajectories into national and international context, see [BCCDC COVID-19 Epidemiology app](#)
- [COVID SPEAK 2020 Round 1 Survey results](#)
- Slides for previous public and modelling briefings by Dr. Bonnie Henry can be found [here](#)
- PHAC's COVID-19 Epidemiology update can be found [here](#)